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ABSTRACT

The ten conference papers on learning and language disabilities begin with discussions of staff development procedures for teachers of language handicapped children, methods of instructional intervention for such children, and the comparative utility of the limited, intensive, and comprehensive methods of identification and evaluation of language handicapped students. Research reported concerns the elimination of isolate behavior of a girl in a learning disability class, the contributions of perceptual and conceptual skill training to ability to discriminate and reproduce geometric form, use of distributive practices to modify spelling performance, and the electroencephalogram as a predictor of intellective and academic performance. Additional papers discuss behavioral aspects of learning disabilities and recent developments in the education of learning disabled adolescents. (KW)

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Exceptional Children Conference Papers

Learning and Language Disabilities

Papers Presented at the

50th Annual International CEC Convention

Washington, D.C.

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STAFF DEVELOPMENT PROCEDURES FOR TEACHERS OF LANGUAGE-HANDICAPPED CHILDREN

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Language-Handicapped Children
Houston, Texas

A paper presented at the 50th Annual International Convention
of the Council for Exceptional Children in Washington, D.C.

S T A F F D E V E L O P M E N T

CONTEXT OF INSERVICE TRAINING

Objectives

The proposal creating the Demonstration Center for Language Handicapped children indicated that the Center will provide the inservice training for selected personnel in the pilot school systems. During the course of the project, the effectiveness of the various training techniques will be evaluated in conjunction with the remediation techniques for which the teachers are being trained. The objective is to determine the most profitable combination of training techniques for replication in teacher education programs of the state's institutions of higher education and corresponding certification parameters for the Texas education Agency.

Basic Premises

The Center operates within a public school setting and the assumption of responsibilities by the two districts involved and their cooperation has been exceptional. The inservice training, as all other facets of the program, must take into account the limitations (and opportunities) that exist in a public school setting.

The design called for a random selection of schools and the teachers normally assigned to the grade levels under study at those schools were included in the project. This meant that there was a range in terms of experience, age, and training for teachers involved in the project.

It is felt that regular classroom teachers can achieve, through

appropriate training, the skills necessary to diagnose and instruct language-handicapped children. They are encouraged to be creative in working with these children, to develop new ideas as they go along, and to share these ideas with other teachers on a regular basis.

Personnel Categories in Terms of Inservice

To assist in answering questions posed relative to staff development, more than 140 people involved in the project have contributed. The following categories (and the number of each) may be noted:

. . Educational Diagnosticians (5)

. . Resource Room Teachers (10)

. . Instructional Program A Teachers (36)

. . Instructional Program B Teachers (33)

. . Instructional Program C Teachers (1)

. . Teacher Aides (19)

. . Administrative and Supervisory Staffs of cooperating districts (38)

. . Language Center Staff (5)

PRELIMINARY PLANNING

During the spring and early summer of 1971, the staff of The Language Center identified and visited selected programs for language and learning disabilities. Their staff training programs were reviewed relative to content and method. In addition, discussions were initiated with knowledgeable people throughout the nation. Many ideas for in-service came from the administrative and supervisory staffs within the cooperating school districts.

Staff Development Conference

As a result of these interactions, a staff development conference was held in May, 1971. The purposes of this conference were:

. . To identify tentatively some required competencies by grade level and assignment for professionals in the program.

. . To identify some appropriate techniques for teaching teachers of language-handicapped children.

Four consultants, from three universities, representing expertise in early childhood education, psychology, language development, and related fields, were brought together for three half-day sessions.

As a result of this conference, the following objectives for pre-service training were identified:

. . Develop understanding of reliable screening procedures.

. . Develop base knowledge of language and learning disabilities.

. . Develop specific competencies of educational diagnosticians, resource teachers, and classroom teachers.

. . Develop an educational team concept.

. . Encourage exchange of information among participants by grade level and assignment.

. . Provide for personal contact with leaders in the field of language and learning disabilities.

In addition, consultants were identified and learning activities, based on the acquistion of essential skills, were sequenced. Behavioral objectives, which could be measured only after resource room and classroom experience in the project, were tentatively identified.

SUMMER INSERVICE MODULE

To initiate the inservice training program for The Language Center, an inservice module for resource teachers and educational diagnosticians was conducted from July 26 to August 13, 1971--a period of three weeks.

Model for Staff Development: Summer Inservice Module

Shown in Attachment A are the major facets of the summer inservice module. Through this model, understanding of appraisal information and utilization of resource support merge, enabling the teacher to develop an educational plan.

Appraisal information. Appraisal information on students in the project is derived from three sources. Some inservice sessions focused upon the development of observational skills as related to classroom behavior which ties in directly with Appraisal Protocol III. Data are also derived through educational testing with training emphasis placed on the administration and interpretation of both group and individual tests of intelligence and language ability. Diagnostic tests such as the Illinois Test of Psycholinguistic Abilities (ITPA) were also considered relative to Appraisal Protocol II. Since one-third of the students were to receive more intensive appraisal services through Appraisal Protocol I, instruction was provided on the meaning, interpretation, and interrelation of data from disciplines outside of education, including psychological, medical, and others as needed (neurological, psychiatric, opthalmological). The major purpose for securing appraisal information on the child was to identify, as specifically as possible, his learning deficits and strengths.

Resource support. Resource teachers and classroom teachers in the project received two types of resource support, materiel and personnel. Since it was recognized that instructional materials used to implement a child's educational plan must take into account the child's interests, his avenues of learning, and his teacher's skill repertoire and abilities, an eclectic approach in the utilization of instructional materials was followed. Materials from more than sixty companies have been in use in the project classrooms. Inservice was designed, first, to acquaint teachers with the range of materials available; then, to match these materials with the student's strengths and weaknesses; and finally, to enable the teacher to utilize those materials she deems appropriate for the individual child.

The project represents, in part, a shift for the teacher from working in isolation in a self-contained classroom to working as a team member. In some elements of the design, one may find a teacher, an aide, an educational diagnostician, a resource teacher, as well as the regular school staff working together to help a child. Much of the inservice was designed to develop this team approach.

Educational plan. Information on the child's strengths and weaknesses and the proper utilization of material and personnel support in overcoming these deficits and building upon these integrities were merged into the development of educational plans for the project students. The project focused upon identifying alternate approaches in the implementation of individualized plans. The necessity for continuing review and modification was stressed.

Content for Preschool Inservice

Listed below are the major content areas covered during the summer inservice module:

. . Overview of the project.

. . Statewide approaches to language and learning disabilities.

. . General techniques of appraisal.

. . Interpretation of diagnostic data.

. . Techniques of informal classroom diagnosis.

. . Multidisciplinary approach to pupil appraisal.

. . Instructional materials.

. . Development of educational plans.

. . Developmental levels of learning.

. . Language development.

. . Visual and auditory perception.

. . Motor development.

. . Art of communication.

. . The language-handicapped child.

. . Working with language disabilities in the regular classroom.

Unique Aspects of the Summer Inservice

The action lab. These were small group sessions usually formed according to grade level. These four-to-six-member groups, involving approximately one-half the inservice time, permitted a real exchange of experience and information among the participants, as well as permitting and encouraging interaction with consultants. These sessions centered around the use of cumulative folders of students involved in the program.

Development of team concept. Two aspects of the summer inservice

focused on the development of a team approach in working with language-disabled children. A three day semi-retreat was held in the rustic setting of a hotel in the Aldine district. Four nationally recognized leaders in diverse areas (child development, auditory and visual perception, language development, and classroom implementation of educational plans) were available to work with the sixteen resource teachers and diagnosticians.

In addition, another emphasis on the team approach was the two-day session on the art of communication. Both verbal and nonverbal communication interactively involved the participants. This phase also permitted the development among the teachers of an understanding of the child who does not communicate well.

INSTRUCTIONAL MATERIALS INSERVICE MODULE

Purposes

A five-phase instructional materials inservice module was initiated during the summer inservice program and is continuing through the school year. This module was designed to familiarize participants with appropriate instructional materials by grade level and to demonstrate their usage in a classroom having children with specific strengths and deficits.

Content

This module provides all personnel participating in the project with information on instructional materials.

Phase One: Special Education Instructional Materials Center. Training sessions were conducted which described methods for analysis of

materials content and the specific application of materials to the language-handicapped child. All participants in the summer inservice then visited the Region IV Special Education Instructional Materials Center. The materials consultant provided an overview of available materials and teachers were encouraged to browse through the displays.

Phase Two. instructional materials van. Approximately one month after the opening of school, the instructional materials van from The University of Texas (Austin) spent one day at each of five schools involved in The Language Center project. The exhibit included materials which had been specifically selected by The Language Center Director for Instruction, Director for Staff Development, and the consultant from The University of Texas (Mrs. Margaret Booker). Approximately 120 teachers, including many not in the project, visited the van for "hands on" examination of materials.

Phase Three: demonstrations by grade level. In October, eight hours of inservice were conducted on two Saturdays which provided for small group demonstrations by grade level of specific equipment and software. The sessions included utilization of the listening center, cassette tape recorder, Hoffman System, Audio-Flash Reader, TT30 System, and various commercial software programs (representing nine firms). The teachers in Instructional Program A, resource teachers, and educational diagnosticians had a choice of six from ten different topics at each grade level.

Phase Four: individual assistance. As teachers have needed assistance in the utilization of specific items of equipment, consultants have been made available. Training takes place in the teacher's class-

room, or in the school when several teachers are involved. Language-handicapped students are used in the training. In addition to several consultants made available through distributors of commerical software, a consultant from a local university has provided valuable assistance.

Phase Five: sharing of ideas. Sessions have been conducted in different schools where resource teachers, by grade level, share ideas. This activity averages approximately three hours a month and includes intervisitation.

INSTRUCTIONAL OBJECTIVES MODULE

Three different sessions on instructional objectives were conducted. These involved the resource teachers and diagnosticians, Instructional Program A teachers, and Instructional Program B teachers.

Purposes

The instructional objectives module was designed to focus on a child's individual performance and to examine alternatives available in daily classroom instruction. In addition, the module was to assist in systematic data collection on instructional materials and activities.

Content

The participants were instructed on the identification, writing, and understanding applications of instructional objectives. They received information on the preparation of criterion question items, determination of classroom entry levels, and making inferences from given information relating to teaching success. Extended testing of instructional objectives as the basis for the generation of curricular data is underway.

OTHER STAFF DEVELOPMENT MEETINGS

Weekly Staff Development Meetings

Each week the resource teachers and educational diagnosticians meet for three hours of inservice activities. This period provides an opportunity to give status reports on all components of The Language Center to participants. It provides a fixed time for outside consultants to speak to diagnosticians and resource teachers. In addition, an opportunity for sharing ideas among participants is provided.

Examples of Content Areas

Among the specific sessions which have been conducted are:

. . The Dyslexic Child.

. . The Research Design of the Project.

. . New Directions in Special Education in Texas.

. . Interpretations of Test Data in Terms of Specific Strengths and Deficits.

. . Administration and Interpretation of the Illinois Test of Psycholinguistic Abilities.

. . Making the Right to Read a Reality.

. . Working with Language Disabilities in the Classroom.

. . Auditory and Visual Perception.

TEACHER AIDE TRAINING

Participants

For eight days, seven hours a day, the nineteen teacher aides in both the regular classroom and the resource rooms participated in

inservice training. Administrators in the participating school districts and members of the Region IV staff were involved in planning for the training program.

Purposes

The primary purpose of the teacher aide training program was to prepare the a-de to work in a public school setting. This included providing the basic competencies required of teacher aides as identified in literature and practice. Special emphasis was also placed upon the necessity to work as an effective member of a teaching team.

Content

The training sessions included emphasis on the following topics:

. . Overview of the project.

. . Philosophy and organization of public schools.

. . Legal status and ethical issues.

. . District policies.

. . Responsibilities and roles of teacher aides.

. . Voice and communication.

. . Cursive writing and printing.

. . Child development.

. . The language-disabled child.

. . Instructional materials.

. . Preparation of classroom materials.

A survey conducted after the aides had been in classes for three months indicated that these topics represented a core of knowledge which was essential in the performance of their tasks. The aides utilized their time as indicated below:

TEACHER AIDES: CLASSROOM ACTIVITIES

(Period of Time Involved)

Activity	Grade		
	Kindergarten	Third	Sixth
Instructional	42%	50%	36%
Materials	27	21	26
Clerical-Housekeeping	15	23	37
Child-Care	17	8	1

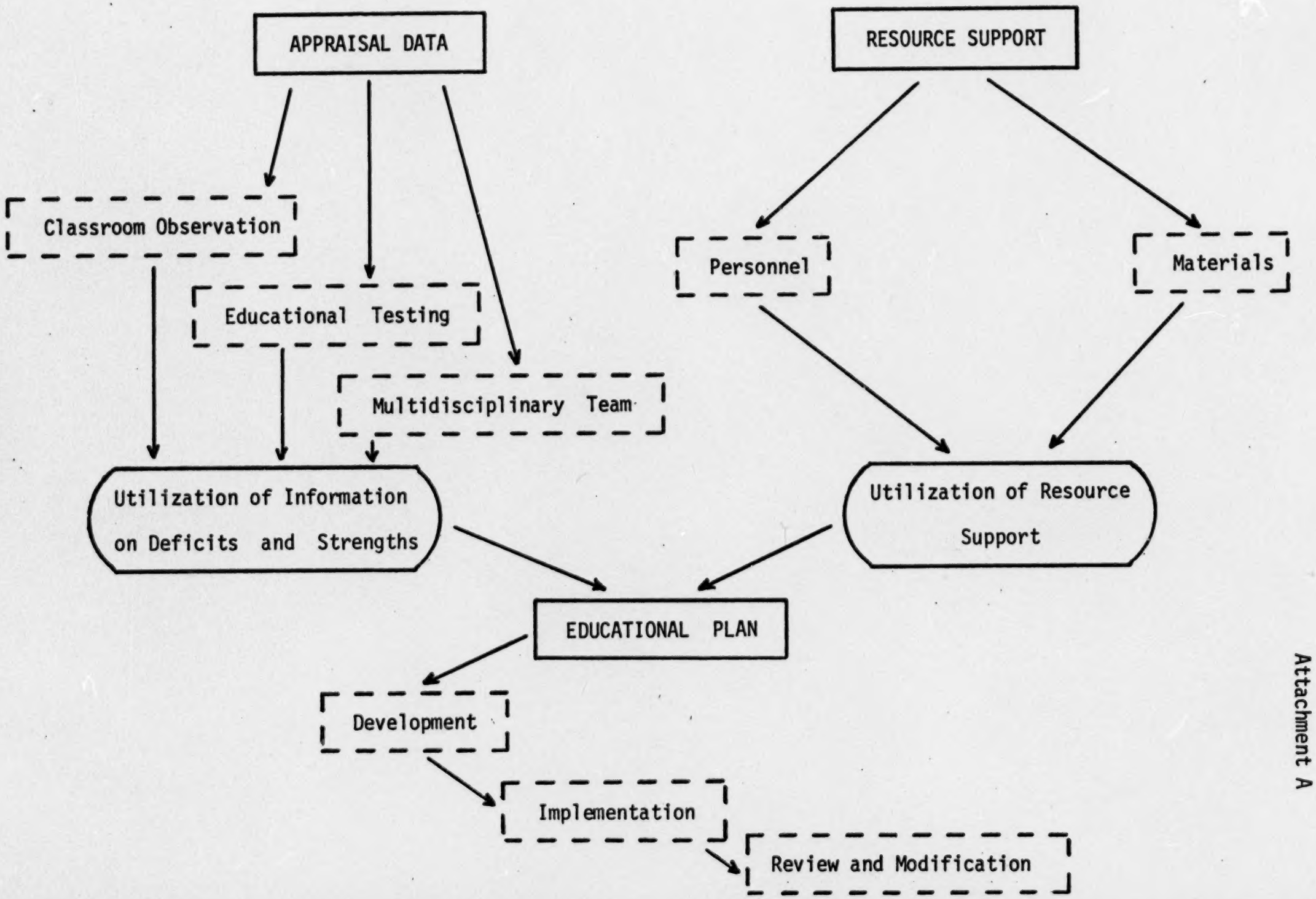
SUMMATION

The training program for The Language Center has attempted, during its first year of operation, to provide each participant with the basic knowledge necessary to work iwth the child with a language disability. Based upon these competencies, the building of proficiency has occurred in the classrooms and resource rooms where individualized assistance for the teacher has been given as needed.

Participants evaluated individual sessions, modules, and staff development activities in general. This procedure provided evaluative data on staff development and served, also, as a means of continuing needs assessment in terms of teacher training.

Success in working with language-disabled children is dependent upon the development of specific skills in the application of information on the child's deficits and strengths, the utilization of resource support, and the development and implementation of personalized education plans. Inroads are being made in these efforts to determine appropriate alternatives in training techniques for replication in schools throughout Texas.

INSERVICE MODEL



Attachment A

METHODS OF INSTRUCTIONAL INTERVENTION FOR LANGUAGE-HANDICAPPED CHILDREN

A paper presented at the 50th Annual International Convention of the Council for Exceptional Children, Washington, D. C., March 25, 1972.

William A. Young, Jr. Ed.D.
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Demonstration Center for
Language-Handicapped Children

Houston, Texas

OVERVIEW

Introduction

The 61st Lesgislature of the State of Texas approved House Bill 432 containing legislation establishing guidelines for the Texas Education Agency to create experimental diagnostic facilities for language-handicapped children. The described project, The Demonstration Center for Language-Handicapped Children, is coordinated through Region IV Education Service Center, Houston, Texas.

The Language Center is in operation in the Aldine Independent School District, a district with approximately 26,000 students, and the Spring Independent School District with 4,000 pupils. These are suburban districts north of Houston.

The administrators and teachers in both the Aldine and Spring school districts have given their full cooperation and support to the Language Center throughout the 1971-1972 school year.

Objectives

The Language Center directs its efforts to the achievement of the following objectives: (See Table 1)

- Development of instructional procedures including teaching techniques and appropriate instructional equipment and materials.
- Make this information available in a concise, practical form for replication in the public schools of Texas.
- Address itself to the development of designs for new staffing patterns and instructional arrangements applicable to public schools.

OBJECTIVES OF THE LANGUAGE CENTER INSTRUCTIONAL PROGRAM

Develop An Instructional Program

- -CURRICULUM DESIGN
- -METHODOLOGY
- -EQUIPMENT
- -MATERIALS

Make Information Available

- -CONCISE
- -PRACTICAL FORM
- -REPLICATION

Establish Designs For

- -STAFFING PATTERNS
- -INSTRUCTIONAL ARRANGEMENTS

INSTRUCTIONAL INTERVENTIONS

An independent variable of the Language Center research design is that instructional interventions selected are potentially beneficial to language-handicapped children. Two categories of this variable are fully crossed with other instructional variables, e.g., instructional programs and appraisal protocols. (See Table 2)

Instructional Programs

In the Language Center, Instructional Program A includes four language-handicapped pupils placed in a regular classroom. The regular classroom teaching situation is contrasted with the placement of language-handicapped pupils in a resource room, Instructional Program B, whereby, during a portion of each day, twenty-four language-handicapped pupils are scheduled in the resource room thirty to fifty minutes per day. In Instructional Programs A, B, and C, teachers select the instructional methods and materials considered most appropriate for the remediation of each pupil's language deficit. Resource teachers provide direct instruction to a selected group of language-handicapped children and provides periodic feedback to the regular classroom teacher.

Instructional Program C is a self-contained teaching program for fifty language-handicapped pupils. The language-handicapped pupils are taught by a team-leader teacher, an educational diagnostician and four teacher aides. The team teaching approach is accomplished in a suite of three classrooms, including one large (two classroom size) teaching area and an adjacent single room teaching area.

In addition, classes are set aside for control purposes and may be used to establish a base for the other three instructional programs. This

PROGRAMS OF INTERVENTION

	INSERVICE	MATERIALS AND SUPPLIES	APPRAISAL	SUPPORT PERSONNEL	ORGANIZATION	PUPIL LEVELS
INSTRUCTIONAL PROGRAM A	Yes	Yes	Protocol I	½ of Classes With Aides	Regular Classroom	K
			Protocol II			3
			Protocol III			6
INSTRUCTIONAL PROGRAM B	Yes	Yes	Protocol I	½ of Classes With Aides	Resource Room	K
			Protocol II			3
			Protocol III			6
INSTRUCTIONAL PROGRAM C	Yes	Yes	Protocol II	Aides	Team-Open Concept	3
INSTRUCTIONAL PROGRAM D	None	None	None	None	Regular Class room	K
						3
						6

control base is assigned to a regular classroom. It is a typical classroom situation.

Appraisal Protocols

A variable of the instructional interventions is that of appraisal protocols. Pupils in Instructional Program A and B are divided into three equal appraisal groups. The three groups each use a different approach to pupil appraisal of language-handicapped pupils. The assessment of pupils from many disciplines were reviewed by several professional specialists.

Protocol I. Region IV Education Service Center, Pupil Appraisal Division, contracted with the Language Center to provide for one-third of the pupils' appraisal information which included an educational plan and a review of recommendations for improvement in pupil learning deficits. Specialists involved in reviewing Protocol I information may include: the regular classroom teacher, resource teacher, principal, assistant principal, speech correctionist, nurse, school counselor (resource teacher), psychologist, chief psychologist, pediatrician, pediatric-neurologist and the Language Center component directors.

Protocol II. This appraisal protocol involves the services of an educational diagnostician providing appraisal and instructional assistance for one-third of the regular and resource room teacher. The educational diagnostician provides assistance in writing an educational plan for indiviaual pupils and follow-up activities for each language-handicapped pupil. Each educational diagnostician works with approximately 40 pupils.

Protocol III. Protocol III consists of the regular or ordinary information provided a classroom teacher. The regular information available

to classroom teachers in cumulative folders is the only assistance provided one-third of the regular teachers and resource teahcers other than the teachers own creative techniques for teaching language-handicapped pupils and follow-up activities for the pupils.

Grade Level

Instructional Programs A and B, each including Protocols I, II, and III will provide instruction in grades kindergarten, third, and sixth. By the 1975-76 school year, all school districts in Texas will provide free instruction for all pupils in kindergarten. Also considered is that the sixth grade is in the middle schools or junior high schools of Texas. Thus, with grade three as the medial grade, the Language Center will provide information spanning the important formative instructional years.

Support Personnel

Instructional Programs A and B with Protocols I, II, and III in grades kindergarten, third, and sixth have an instructional intervention involving the assignment of a teacher aide for one-half of all the Language Center Instructional Programs A and B teachers. Instructional Program C is complimented with the assistance of four teacher aides who carry out the major portion of the instruction in the large self-contained classrooms. Introduction of new instructional material is the responsibility of the team-leader and the educational diagnostician. The four teacher aides follow-up with insturction on all material previously introduced in the large self-contained classroom. Those teachers who have teacher aide support may use the assigned teacher aide as they deem appropriate. The teacher may choose to let the aide work closely with language-

handicapped pupils or the teacher may prefer to work closely with these pupils herself and let the aide serve the needs of the remainder of the class for a specified period.

Staff Development

An instructional intervention made available to all teachers in Instructional Programs A, B, and C is staff development. The following preservice and inservice programs were made available to all teachers:

Preschool Inservice Training

Instructional Materials

Instructional Objective Module

Teacher Aide Training

Curriculum Development Meetings

Individual Assistance With Instructional Materials

The staff development model serves as a basis for a developmental training program for regular classroom teachers, resource room teachers, and educational diagnosticians in the project. As example, several hours were made available for the selection of individual equipment, instructional materials, and supplies.

Equipment, Materials, and Supplies

All teachers in Instructional Programs A, B, and C were given the opportunity to select instructional materials and supplies which they use in instructing language-handicapped pupils.

Equipment, materials, and supplies were selected in June 1971 in order that resource teachers and regular classroom teachers would have a minimal amount of materials and supplies available when school opened in Fall, 1971.

The teachers were then given an opportunity to select the instructional material to be used with individual pupils in their regular or resource room after observing the pupils individual differences.

After classes began in September, it was necessary to continue interviewing sales representatives of equipment and materials concerning the purchasing of new products. Staff personnel and educational diagnosticians continue to assist teachers in selecting appropriate instructional materials and equipment for individual pupils. A way of attempting to control this selection of materials was for the Director of Instruction to provide the initial approval of requisitions concerned with the purchase of instructional materials and equipment.

After reviewing materials and equipment in May 1971 of more than sixty publishers and equipment companies and consulting with teachers in Instructional Programs A, B, and C, supervisions, educational consultants, administrators, the following equipment was purchased for resource rooms in the Language Center: (See Tables 3A, 3B, and 4)

* Cassette Recorder, TRQ 253, Hitachi

  Filmstrip Previewer Standard Model 1995

* Filmstrip Projector, Standard Model 666

  Graflex Study Mate II Filmstrip Viewer

  Graflex Auto Vance Study Mate, Filmstrip and Cassette

  Film Loop Projector, 8MM Technicolor, 510 WS

  Audio Flashcard Reader, Electronic Futures Inc.,Portable

* Flash Reader, Model TT-30, Teaching Technology Corp.

  Overhead Projector, Beseler, Porta Scribe G-100

* Eight Student Listening Center, Avid Corp., Series 88 H.V.

RESOURCE ROOM EQUIPMENT

*Cassette Recorder, TRQ 253, Hitachi

Filmstrip Previewer, Standard, Model 1995

*Filmstrip Projector, Standard, Model 666

Graflex Study Mate II, Filmstrip Viewer

Graflex Auto-Vance Study Mate, Filmstrip and Cassette

Film Loop Projector, 8MM Technicolor, 510WS

Audio Flashcard Reader, Electronic Futures Incorporated, Portable

*Flash Reader, Model TT-30, Teaching Technology Corporation

Overhead Projector, Beseler, Porta Scribe G-100

*Eight Student Listening Center, Avid Corporation, Series 88 H.V.

Record Player, Audio Visual Instruments, Model 2130

TABLE 3B

RESOURCE ROOM EQUIPMENT

STUDY CARREL, L.T.V. GUILD 836, GROUP OF TWO STATIONS

AUDIO LEARNING CENTER LISTENING TABLE, AMERICAN DESK, 36"x 72"

TABLE, PORTABLE, BRETFORD, 26", TWO ELECTRICAL OUTLETS

TABLE, KIDNEY SHAPE, 48"x 72"

* TABLE, 36"x 72"OR 30"x 60"

* CHAIR, 12," 14," OR 15"

* SCREEN, FIBERGLASS, 60"x 60"

* SCREEN, FIBERGLASS, 18"x 20"

ITEMS AVAILABLE FOR LOAN

CASSETTE RECORDER, WOLLENSAK #2520

TRANSPARENCY MAKER, 3M

CONTROLLED READER, EDL

TACH X, EDL

FLASH X, EDL

PROJECTOR, HOFFMAN MARK IV

CAMERA, POLAROID, MODEL 420

CAMERA, INSTAMATIC X-45

CAMERA, SUPER 8, KODAK M-30

SLIDE PROJECTOR , EKTAGRAPHIC KODAK MODEL B

PROJECTOR, EKTAGRAPHIC KODAK MSF 8

AUDIO RESPONSE UNIT, IBM 211

TAPE VIDEOCORDER, AV3600, ½" SONY

ENSEMBLE AV 3200 DX, SONY

MONITOR, 22" SCREEN

MONITOR, 9" SCREEN [26] 28

25

Record Player, Audio Visual Instruments, Model 2130

Study Carrel, LTV Guild 836, Group of Two Stations

Audio Learning Center Listening Table, American Desk

Table, Portable, Bretford, 26" Two Electrical Outlets

Table, Kidney Shape, 48" x72"

* Table, 36" x 72" or 30" x 60"

* Chair, 12" 14" or 15"

* Screen, Fiberglass 60" x 60"

* Screen, Fiberglass 18" x 20"

* Equipment for Regular Classroom

Method of Instruction

The eclectic approach to pupil instruction is being utilized in all classes in the Language Center. The materials selected by the regular teachers and resource teachers provide an adequate range for selection in terms of theoretical basis, language functions covered, and academic level.

A most important requirement in the success of the instructional program, if not the most important requirement, is a complete open communication system between the regular classroom teacher and resource teacher, educational diagnostician and resource teacher, or educational diagnostician and regular classroom teacher, as well as all concerned professionals. Development of instructional skills in teaching language-handicapped children is important in preparation of the language curriculum.

Curriculum Design

Preparation for the 1972-73 Language Center Curriculum Design was begun during the winter of 1971 and will continue during the spring and summer of 1972. The following initial Curriculum Design is outlined:

. Goals and objectives

. Teaching methods and techniques

. Material, equipment, and supplies

. Evaluative techniques

. Methods of continuous study and improvement

. Curriculum guide

During the spring, Language Center personnel will gather instructional information from regular teachers, resource teachers, and educational diagnosticians. Resource teachers and educational diagnosticians will write the curriculum for their grade level during a three-week period in July and August 1972. A work copy of the Language Center curriculum will be used by Language Center personnel during the 1972-73 school year and will be continually revised. To determine pertinent information relating to the Language Center curriculum, a system for insturction data collection was designed.

Instructional Information Feedback System

The purpose of the Instructional Information Feedback System is to determine the regular teacher and resource teacher's use of instructional media, teaching techniques, and student-oriented activities. The Instructional Information Feedback System attempts to determine to what extent the selected instructional variables apply to the teaching of language-handicapped children. All teachers are completing the instructional feedback form on a bi-weekly basis during the Spring, 1971.

Conclusion

The Demonstration Center for Language-Handicapped Children is deeply concerned with instructional interventions that will assist in remediating language-deficits manifested by children, who in spite of their apparent adequate intelligence, demonstrate difficulties in learning to read within a teaching program that is effective for most children.

William A. Young, Jr. Ed.D.
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COMPARATIVE UTILITY OF THE LIMITED, INTENSIVE AND COMPREHENSIVE METHODS OF PUPIL APPRAISAL

A Paper Presented At
1972 CEC Convention

by

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APPRAISAL COMPONENT

PRIMARY OBJECTIVES

The primary objectives of the appraisal component of the Language Center are two-fold. First, to provide a screening procedure for evaluating levels of proficiency in comprehending both written and spoken language and in synthesizing both written and spoken language. Specifically, this objective is concerned with determining the most accurate, reliable, practical, and economical means of screening from a pupil population, those children with language handicaps.

The second primary objective is to employ and compare a number of diagnostic protocols, including combinations of educational, psychological, sociological, and medical evaluation procedures. Moreover, this objective requires a determination of the most accurate, reliable, practical, and economical means of identifying those children whose language handicap is their primary handicap, i.e., by separating from the screening population those whose disabilities are attributable to mental retardation, emotional disorder, or motor dysfunctions, and by selecting those whose disabilities may be remedied through special instructional methods within the regular public school environment.

GRADE LEVELS

The three grade levels chosen for the study represent the critical stages of language disability.

a. At kindergarten, the problem is one of delayed or inadequate language development. The instructional emphasis is upon the development of basic language skills.

b. By the time a child has reached third grade, the problem has become more specific and the focus is upon identifying and remediating specific language disabilities.

c. At the sixth grade level the language disability is less easily remedied. Here, the instructional emphasis shifts to one of satisfactory adjustment and compensation for the specific language handicap.

STUDY POPULATION

The research design required that 542 pupils be randomly drawn from all the language-handicapped boys and girls in the kindergarten, third, and sixth grades in the Aldine and Spring school districts. It was necessary to select the project pupils through a process of random selection in order to generalize the results to the population studied in the two school systems.

To further extend this generalization to most of the school districts in Texas, we had to make sure that the ethnic, sex, and IQ distribution were comparable to those reported in the state as a whole. A tally was made of these characteristics in the more than 6000 pupils initially screened for language disability. Overall, 15% of the students were black, 11% had Spanish surnames, and the other 74% comprised Anglo and other ethnic backgrounds. Fifty-one percent of the pupils were boys and the mean IQ was 97. These figures correspond closely enough with state averages to permit the Language Center to generalize the conclusions of the project to most Texas school children in the three grade levels under investigation. (See Table 1).

DEFINITION

According to the definition adopted by the Language Center, the term language disability refers to school age boys and girls who are experiencing difficulty in written or spoken language, but whose language deficit is not directly attributed to intellectual, emotional, or physical handicap, or to lack of fluency in the English language. Rather, it is attributed to specific learning disability or general lack of opportunity to learn.

SCREENING OVERVIEW

Our first task was to screen the study population for these youngsters. To do this, we needed to develop a generally applicable and economical, yet valid, procedure for screening language disability in youngsters at the three grade levels.

a. "Generally applicable" meant replication by any school district in Texas regardless of size or particular demography.

b. "Economical" meant a screening procedure the state could afford to subsidize. This meant using short-timed individual tests or group tests of language disability. It also meant developing systematic measures for utilizing the knowledge of teachers, principals, school counselors, nurses, and speech therapists in the screening program.

c. "Valid" meant a procedure which not only could identify those boys and girls who have language disability, but could predict just as well those who would not have a language problem.

DEMOGRAPHIC CHARACTERISTICS OF STUDY SAMPLE BY GRADE LEVEL AND OVERALL

Table 1

GRADE LEVEL	SAMPLE SIZE	ETHNIC BACKGROUND			SEX		MEAN
		Black	Spanish Surname	White	M	F	IQ
KINDERGARTEN	174	0.35	0.14	0.51	0.57	0.43	
THIRD	209	0.21	0.15	0.64	0.61	0.39	90.40
SIXTH	159	0.31	0.22	0.47	0.74	0.26	83.71
OVERALL	542	0.28	0.17	0.55	0.65	0.35	87.06

Schools and classroom teachers were randomly assigned to the various experimental conditions. The 6000 students were first screened by teacher checklists. Almost 1800 or 28% were referred by their teachers as experiencing some kind of language disability. These boys and girls were administered language screening tests and 1100 or 18% were found to be language handicapped. The 542 students required for the experimental sample were randomly drawn from this group. This represented half the boys and girls with language handicaps at the three grade levels in the participating schools (See Table 2).

PHASE I SCREENING

The first order of business under the screening program was to develop a systematic procedure for recording the teacher's observations and judgments about the youngster's language skills.

At the kindergarten level, a checklist was developed asking the teacher to rate each child in the classroom on a number of educational tasks. The tasks were concerned with listening and seeing skills, gross and fine motor skills, memory, attention span, social development, and verbal expression. A child became suspect when he was rated "inadequate" in four or more educational skills.

A more comprehensive referral system was used for third and sixth graders. In each school a local Review and Referral Committee was established. [redacted]incipal, counselor, nurse, speech therapist, and remedial reading teacher met as a group. Each classroom teacher brought the cumulative folders to the meeting and all pupils were reviewed on the basis of thirty criteria. These criteria may be grouped into five general areas:

a. Teacher ratings on the youngster's verbal and written expression.

b. Teacher ratings on the youngster's academic performance.

c. Whether or not the child failed a subject in the recent past.

d. Any special referrals for testing or treatment.

e. Academic achievement test scores.

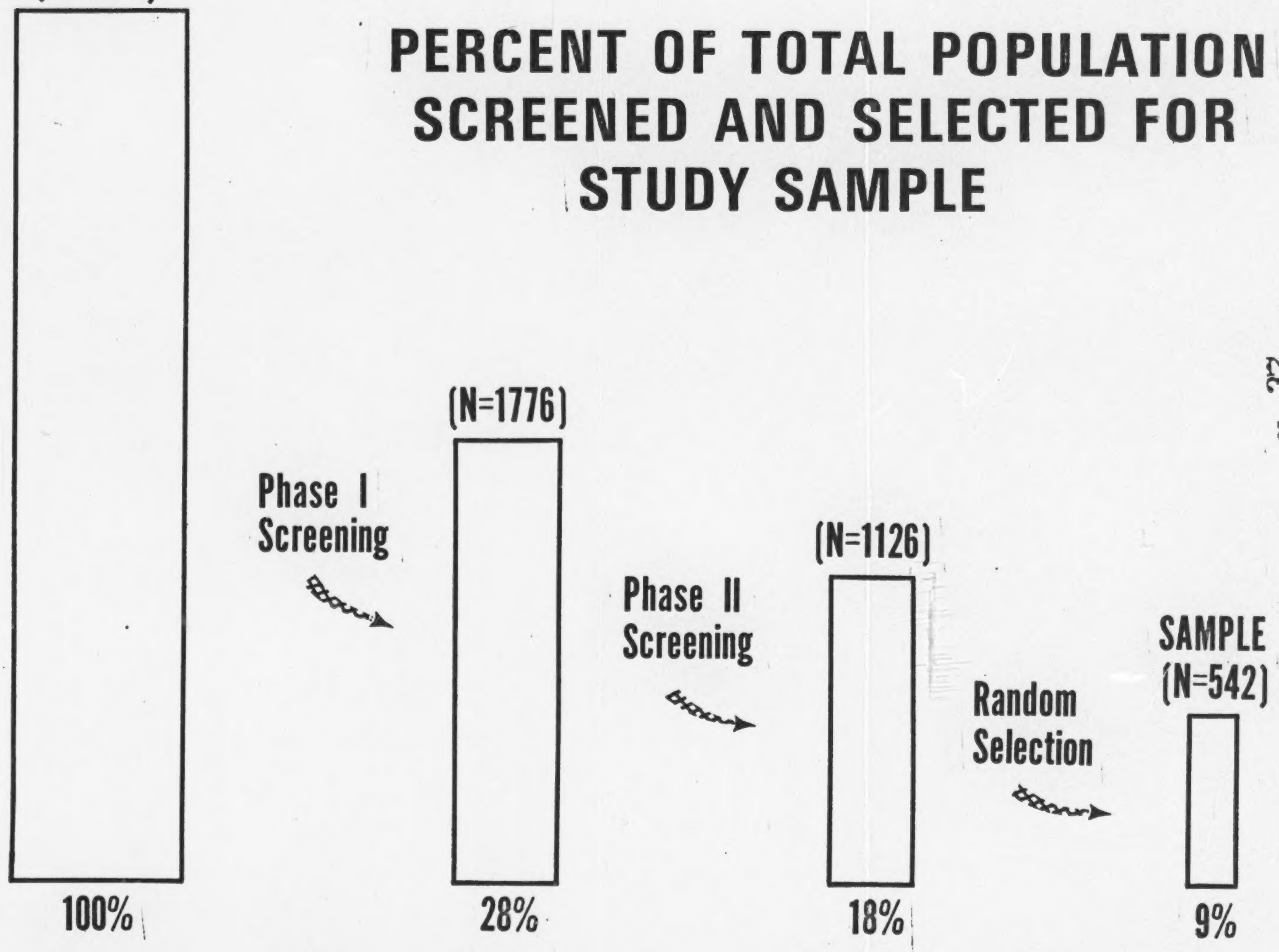
On the whole, we found that most students (42%) were referred because the teacher felt the child's written or oral language was considerably poorer than it should be.

Children were referred equally on the basis of teacher estimate of grade level and test measure of grade level.

The least used set of referral criteria were academic failure and special referral. When viewed by grade level, a greater number of sixth graders scored poorly on achievement tests than did third graders. This group also scored lower on intelligence tests than

Table 2

PERCENT OF TOTAL POPULATION SCREENED AND SELECTED FOR STUDY SAMPLE



did third graders. Also, sixth grade teachers have a much larger pupil load than third grade teachers and rely more heavily on test scores (see Table 3).

PHASE II SCREENING

All those suspected of language disability were given a battery of language screening tests.

The screening version of the Language and Learning Assessment for Training Test called the SLLAT was administered to the kindergarten groups. This test is a short-timed individually administered test. It was developed by Dr. Tina Bangs and is described in her book, Language and Learning Disorders of the Preacademic Child. The SLLAT assesses oral language skills and a number of learning avenues.

Third and sixth graders were administered two group screening tests. One was the Durrell Listening and Reading Series which acquires measures of the child's actual reading level, his potential reading level, and the difference between the two. The other is Beth Slingerland's Screening Test for Identifying Children With Specific Language Disability. This test provides a broad assessment of the youngster's language skills.

Eight subtests measure a variety of visual, auditory, and motor skills. Also included, are individual auditory tests to identify those who are unable to recall or pronounce words correctly or who are unable to express organized thoughts in either spoken or written language.

A third or sixth grade youngster had to make fifteen or more errors on the Slingerland and score on the Durrell two grades below level for sixth grade and one grade below level for the third grade in order to qualify for the language project.

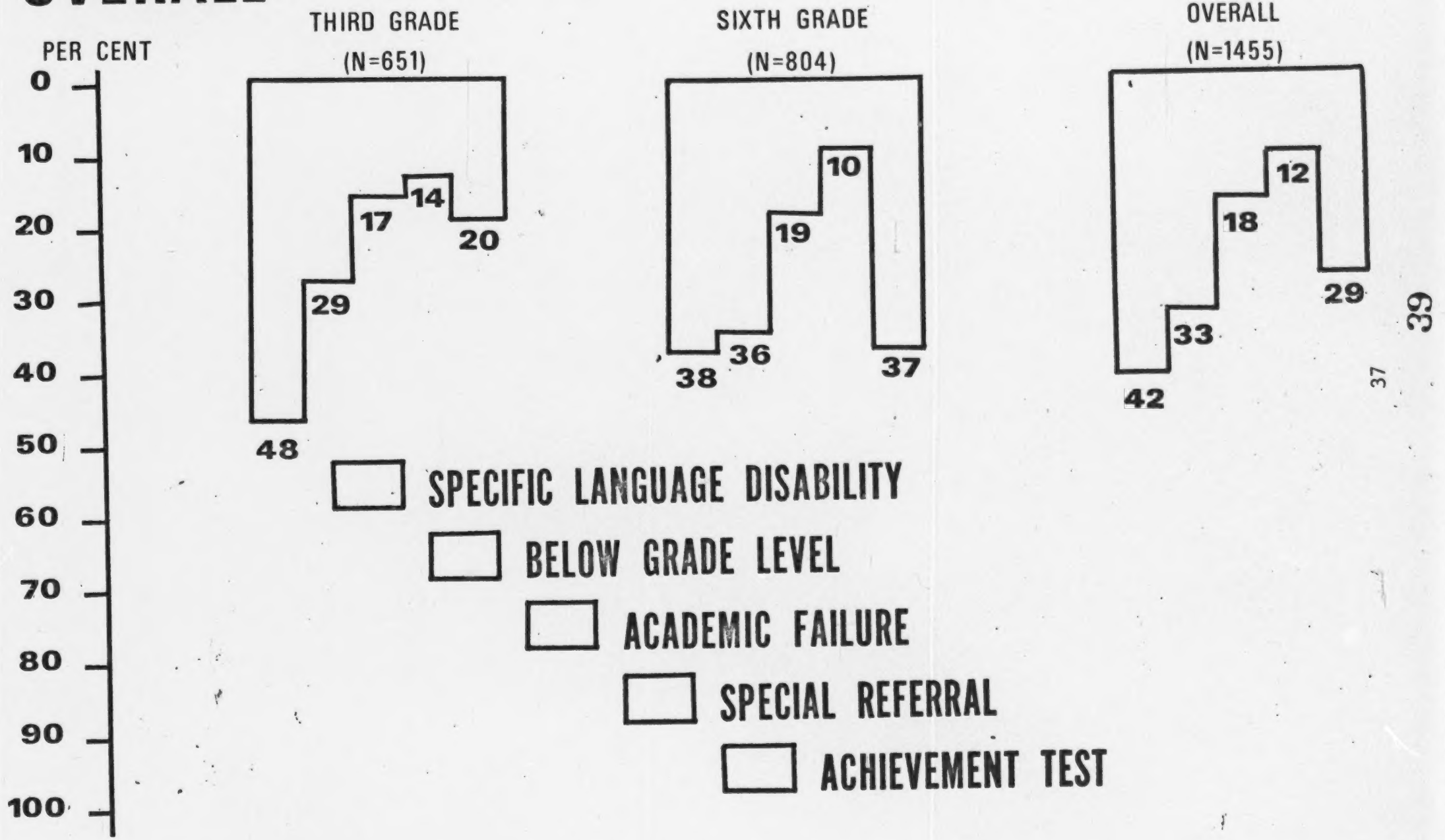
SCREENING RESULTS

Kindergarten. When viewed by grade level, there was little difference between the number of kindergarten pupils referred by their teachers and the number diagnosed as language disabled by the test administrators. This phenomenon was masked in the overall averages because of the smaller number of kindergarten pupils originally screened. The important finding to keep in mind is that the screening test used at the kindergarten level offered little refinement to the previous judgment made by the classroom teacher. In most instances, the test results concurred with teacher ratings when the teacher judged the child to be language disabled. There was considerable disagreement between teacher ratings and test results, however, with pupils the teacher rated as nonhandicapped (see Table 4).

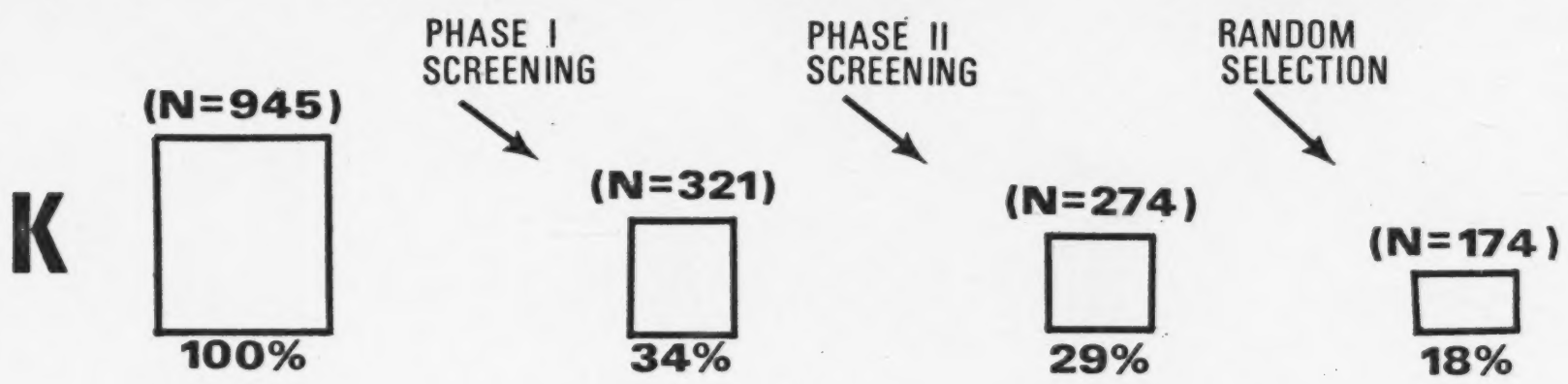
Third and Sixth Grades. Third and sixth grade differences between teacher ratings and test results are more accurately reflected

PERCENTAGE OF REFERRED PUPILS SELECTED IN EACH CATEGORY BY GRADE LEVEL AND OVERALL

Table 3



PERCENT OF TOTAL POPULATION SCREENED AND SELECTED FOR STUDY SAMPLE BY GRADE LEVEL



in the overall averages reported earlier. Considering the operation of chance deviations in any administration of group tests, the two screening tests corresponded well with initial teacher ratings. By combining the results of both instruments, we were able to remove much of the test variability and greatly increase the discriminatory power of the test battery for screening language disability. Table 5 illustrates the degree of correspondence betweem teacher predictions and actual test performance on specific screening tests.

STUDY SAMPLE

The entire screening process was completed during the summer of 1971 with third and sixth grade pupils so that the different instructional programs could begin the first school day of the project year. Study pupils at the kindergarten level were not identified until the second month of school since screening could not begin before September. The same ethnic, sex, and IQ tallies were obtained in the study sample as previously acquired with the population (see Table 6). This was done, first of all, to obtain a clearer focus on the demographic characteristics of the study sample, and second, to see how these characteristics differed from the original source.

Ethnic Differences. On the whole, 28% of the boys and girls with language disability were black, 17% had Spanish surnames, and 55% were white or of other racial heritages. Whether the upward shift in percentages of Afro-American and Mexican-American students with language disability is primarily due to genetic heritage or to lack of opportunity to learn is a subject of much controversy today. The fact remains, however, that current standardized testing programs identify language disability in a disproportionately large number of minority students when compared to population percentages.

Sex Differences. In general, more boys were identified as language disabled than girls. This is not new information. Extensive research backs up this finding and offers an assortment of speculative rationales. What does appear newsworthy is that the sex differential tends to increase with advancing age. At the kindergarten level, 57% of the language-disabled youngsters were boys, at third grade 61% were boys, and at sixth grade 74% were boys. Either the language disability becomes more pronounced with boys as they get older, or more girls than boys eventually resolve the problem, or both. Whichever the case, the question still remains, why?

IQ Differences. The mean kindergarten IQ in the study sample is presently being computed and was not available at the time this report was prepared. The mean IQ of third grade students with language disability was 90; the mean IQ for sixth graders in the language disability program was 84. Overall, the mean IQ's of the study sample were significantly lower than those obtained with the original population. This in part may be attributed to confusion between specific language disabilities and generally low intelligence.

PROPORTION OF STUDENTS PASSING AND FAILING LANGUAGE CENTER SCREENING TEST

Table 5

	KINDERGARTEN		THIRD		SIXTH	
	Predicted Pass	Predicted Fail	Predicted Pass	Predicted Fail	Predicted Pass	Predicted Fail
Pass SLLAT	.55	.15				
Fail SLLAT	.45	.85				
Pass SLINGERLAND			.49	.10	.68	.22
Fail SLINGERLAND			.51	.90	.32	.78
Pass DURRELL			.87	.30	.67	.33
Fail DURRELL			.13	.70	.33	.67
Pass BOTH			.80	.08	.91	.18
Both BOTH			.20	.92	.09	.82

DEMOGRAPHIC CHARACTERISTICS OF STUDY POPULATION BY GRADE LEVEL AND OVERALL

Table 6

GRADE LEVEL	PUPIL POPULATION	ETHNIC BACKGROUND			SEX		MEAN
		Black	Spanish Surname	White	M	F	IQ
KINDERGARTEN	945	0.12	0.11	0.77	0.53	0.47	
THIRD	2557	0.15	0.12	0.73	0.50	0.50	97.94
SIXTH	2332	0.15	0.10	0.75	0.51	0.49	95.74
OVERALL	6370	0.15	0.11	0.74	0.51	0.49	96.84

On the other hand, most intelligence tests are constructed around basic language areas and a disability in one or more of these areas would tend to depress the IQ score. Of further interest, was the inverse relationship between IQ scores and age. Sixth grade language-disabled students yielded lower IQ scores than third graders.

APPRAISAL QUESTIONS

Every school administrator is concerned with four basic questions about appraisal:

1. How much?

2. What kind?

3. Can I afford it?

4. Is it worth it?

"How much" means how extensive should appraisal be? Is group screening enough or should individual testing be done? Will a careful examination of the pupil's cumulative folder provide a sufficient amount of information about the youngster's learning strengths and processes or must he be examined with batteries of instruments?

"What kind" refers to the particular viewpoint of diagnosis. Should the child be assessed by a psychologist or an educational diagnostician? Since this is a language problem, perhaps the assessment should be done by a speech therapist. Some say LD is a medical problem and that the examination should be conducted by a neurologist, optometrist, or even psychiatrist. Others say he should be examined by a team of professionals and then discussed and reviewed in a formal staff conference. Still others say it should be an informal one-to-one process between the teacher and the educational diagnostician.

"Can I afford it" refers to the average cost per child for appraisal services. Two years ago, Texas provided no support for the appraisal of exceptional children. Today, the state reimburses the school district $35.00 for each appraisal and provides additional consultant funds which can also be used in appraisal. A wise distribution of the monies may cover the costs of much of the educational assessment, but $35.00 becomes thinly spread when the costs of medical, psychological, and sociological services are included.

"Is it worth it"-the era of accountability. Is the added expense of pupil appraisal services justified by ultimate change in his performance? In clinical settings the answer has been yes. In public schools, no one is sure. In most instances, appraisal has been used only to identify the problem, but once the disability has been identified, the process stops. Until the process of appraisal

includes a specific plan of educational intervention, the results provide little or no help to the classroom teacher.

Appraisal Protocols

The second objective of the Appraisal Component was to investigate different procedures for appraising the language-handicapped child and for communicating this information in a manner that is both practical to the school district and useful to the classroom teacher. To accomplish this objective, we undertook a controlled study of three methods of pupil appraisal--each more comprehensive and involving more professional man hours and cost than the other (see Table 7).

Assessment By Teacher. The first procedure placed the task of appraisal and program planning solely with the classroom teacher. The teacher was given access to test materials and inservice education in test administration and interpretation. Much of the success of this limited approach to pupil appraisal was dependent upon the teacher's knowledge of classroom organization, management of classroom time, and some creative planning.

Educational Diagnostician. The second procedure provided the classroom teacher with the help of a trained educational diagnostician. The diagnostician met frequently with the teacher and assisted her in determining how the language-handicapped children in her classroom could best be taught. This procedure entailed more professional time with each child, but was still considered a local approach to the problem. All assessment and planning was done by just two people--the school diagnostician and the pupil's teacher--with additional information provided by the school nurse and speech therapist.

Multidisciplinary Team. The third procedure encompassed the services of many professional specialists. It provided the most comprehensive look at the child, but was also the most costly and time consuming. We referred to this as the "multidisciplinary team" approach to pupil appraisal. By "multidisciplinary team" we meant the language-handicapped child was first screened by the school nurse for vision and hearing abnormalities, them by the speech therapist for speech and articulation difficulties. A detailed family history form was completed by his parents and he was given a physical examination by a pediatrician. The child was then given a battery of educational and psychological tests by a state certified psychologist.

When all this information had been completed on all of the language-handicapped children in a particular school participating in this phase of the project, a time was set and the individual examiners met as a group in the school building. At this time, a pediatric neurologist joined the group to review the child's medical history and determine if more specialized examinations were indicated. Present also at the meeting were the classroom teacher, school principal, school counselor, nurse, speech therapist, and the director of special education. As each group of children was reviewed, the classroom teacher was

Table 7

14

TEAM

EDUCATIONAL
PSYCHOLOGICAL
SOCIOLOGICAL
CONFERENCE
COMPUTER
MEDICAL

OR

EDUCATIONAL DIAGNOSTICIAN

EDUCATIONAL TESTING
DIAGNOSTIC TEACHING
EDUCATIONAL PLANNING
FOLLOW-UP
FEED BACK

TEACHER

FOLDER
INSERVICE
MATERIALS
CONSULTANTS
SCREENING

46

44

relieved by a substitute teacher and became an active member of the pupil staffing conference.

As with the first and second protocols, the classroom teacher was intimately involved in the appraisal process. We felt this to be absolutely necessary, for all the time and effort expended on pupil appraisal services would be of little value unless the instructional implications were successfully communicated to the child's teacher.

DEMONSTRATION CENTER FOR LANGUAGE-HANDICAPPED CHILDREN
DESIGN OF THE EXPERIMENT

(TOTAL N=482)

	INSTRUCTIONAL PROGRAM A (N=216) REGULAR TEACHER						INSTRUCTIONAL PROGRAM B (N=144) RESOURCE TEACHER						INSTRUCTIONAL PROGRAM C (N=50) TEAM	INSTRUCTIONAL PROGRAM D (N=72) CONTROL
	AIDE			NO AIDE			AIDE			NO AIDE			AIDE	
	APPRAISAL PROTOCOL			APPRAISAL PROTOCOL			APPRAISAL PROTOCOL			APPRAISAL PROTOCOL			APPRAISAL PROTOCOL	
	I	II	III	I	II	III	I	II	III	I	II	III	II	
KINDERGARTEN (N=144)	ANDERSON 12	ANDERSON 12	COLONIAL HILLS 12	BETHUNE 12	4 BAMMEL / MENDEL 8	BETHUNE 12	SPRING 8	SPRING 8	SPRING 4 / PONDEROSA 4	JOHNSON 8	JOHNSON 8	JOHNSON 8		RAYMOND 20 / FRANCIS 4
THIRD GRADE (N=194)	OAKWILDE 12	OAKWILDE 12	RAYMOND 12	HIDDEN VALLEY 12	ORANGE GROVE 12	OLESON 12	SPRING 8	SPRING 8	BAMMEL 8	CARROLL 8	CARROLL 8	CARROLL 8	COLONIAL HILLS 50	FRANCIS 18 / MENDEL 6
SIXTH GRADE (N=144)	HAMBRICK JR. 12	HAMBRICK JR. 12	HAMBRICK JR. 12	STOVALL JR. 12	STOVALL JR. 12	STOVALL JR. 12	ALDINE JR. 8	ALDINE JR. 8	ALDINE JR. 8	SPRING MIDDLE 8	SPRING MIDDLE 8	BAMMEL MIDDLE 4 / SPRING MIDDLE 4		HAMBRICK JR. 12 / INWOOD 8 / DREW JR. 4

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Elimination of Isolate Behavior of a Girl in a Learning Disability Class*

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March, 1972

*Paper presented at the 50th Annual International Convention of The Council for Exceptional Children, March 22, 1972, Washington, D.C.

The Special Education Program at the University of Vermont has as its main function the training of consulting teachers. A Consulting Teacher is an educational specialist who works with regular and special class teachers in defining and measuring academic and social behaviors of children eligible for special education services. Most of the children with whom we work are in regular classrooms--the low expectancy estimate, described by Heller, that 10% of school-age children are handicapped learners. Consulting teachers help the teachers to specify instructional objectives, implement teaching/learning procedures, employing the principles of applied behavior analysis, to bring about the desired, usually critical, changes in the children's academic performance and/or social interactions. The eventual goal of the Special Educational and Pupil Personnel Services Division of the Vermont State Department of Education is to have consulting teachers in each of the 53 superintendencies in Vermont.

In conjunction with an EPDA grant to Model Cities in Winooski, Vermont, the Special Education Program of the University of Vermont planned and implemented a paraprofessional training program. This multi-faceted program included on-the-job training for teachers and paraprofessionals, most of whom served as instructional aides, with the balance serving as library, guidance, and secretarial aides in the public schools of Winooski, a socially disadvantaged community adjacent to Burlington, where the University is located.

Initially, Dr. Edward Hanley, a faculty member of the University offered a two-week introductory workshop for

all personnel involved--school administrators, classroom teachers, and paraprofessionals-- and throughout the year we held weekly workshops for the paraprofessionals and two graduate level courses in applied behavior analysis for teachers of regular classes.

The following study was carried on in the classroom of a teacher enrolled in one of the courses. Mrs. Stephanie Kelly had a background in behavior theory before coming to Vermont, so she had already incorporated the use of specified instructional objectives and reinforcement in her daily procedures and was very amenable to the required data-taking. At the time of this study, Mrs. Kelly was teaching a transitional class (K-1st) of 19 learning disability children in an elementary school in Burlington. Evaluation and placement of the children in this class had been done by the school psychologist, the physical education supervisor, and the kindergarten teacher.

Pupil and classroom

Julie was a 7 year old girl in Mrs. Kelly's transitional classroom. She was often depressed and remained in a corner of the room disrupting the class with outbursts of sobbing and thrashing. The child had received psychiatric treatments for a year and the entire family was being counseled at a family psychotherapeutic center. Julie was an extreme isolate from the beginning months of school until January of the year the following research was undertaken.

Behaviors

Isolate behavior was defined as being outside the group area where the rest of the class was interacting with the teacher. Julie had to bring her chair within the circle drawn on the floor

in order to be considered in the group area for each session.

Data recording and reliability procedures

Using a multiple baseline procedure for the two 20 minute sessions daily in the morning and in the afternoon, the classroom teacher recorded on a stopwatch the number of minutes that Julie's chair was situated within the chalk circle. If the child's chair was within the circle and she was in her seat, she was considered to be in the group.

Reliability measures were taken at least once during each experimental phase by an independent observer who visited the class regularly and went unnoticed by the children. Percentage of agreement was determined by comparing the cumulative number of minutes spent in the group as recorded by the teacher and the second observer.

Instructional materials

The teacher carefully chose materials for this so-called "game" which included the Peabody language kit in the morning and basic arithmetic facts on flashcards in the afternoon.

Baseline

The number of minutes Julie spent in the group was recorded during both the language period in the morning and the arithmetic period in the afternoon. Thirteen baseline sessions were recorded during the language period, and 22 baseline sessions were recorded during the arithmetic period. During the baseline condition, Mrs. Kelly conducted her classroom management and activities in the usual manner. That is, all of the children

were asked to come within the circle for the planned group activity.

As indicated on the baseline graphs, Julie spent very little time in the group.

Phase 1

Mrs. Kelly had noticed Julie's preoccupation with the jumprope she constantly carried to school with her-a "security blanket" so to speak. So, starting at session 14 and continuing to session 40 of the morning language period, Julie was told that for every minute she stayed in the group in language, she would earn a minute to play with her jumprope during morning recess.

Immediately Julie started joining the group for the morning period, but not for the afternoon period.

Phase 2

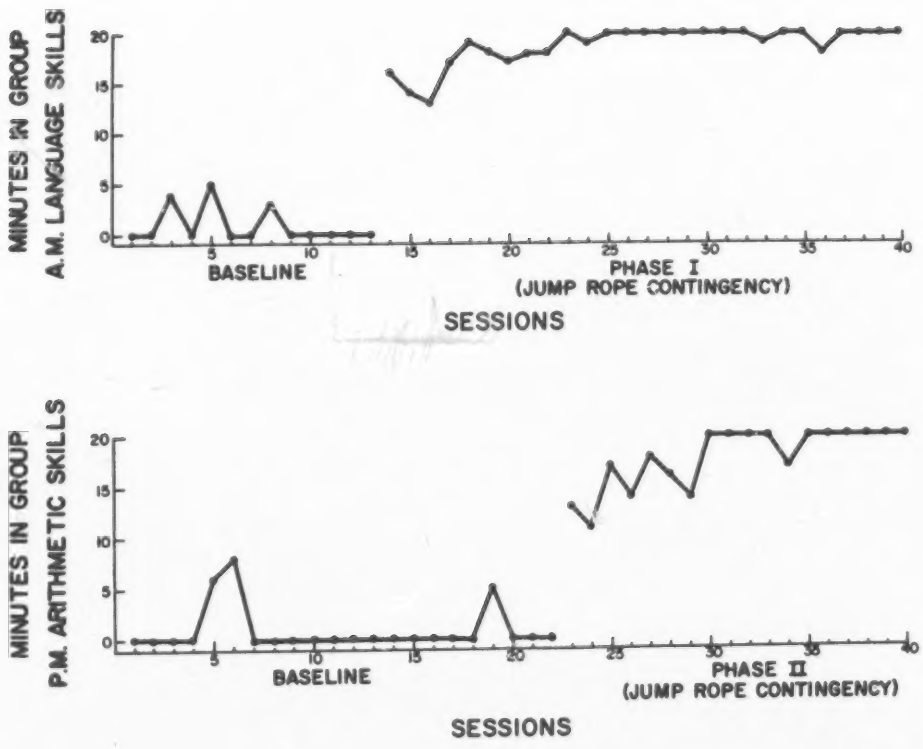
Starting at session 23, the jumprope contingency was added for the afternoon arithmetic session. The teacher told Julie that for every minute she spent in the group in the afternoon session, she would earn a minute of jumproping during afternoon recess. The same contingency and consequences of phase 1 were continued.

At this point Julie began to spend time in the group, and by the 30th session she was in the group for the entire 20 minute period both morning and afternoon.

Results

In regard to this improvement in reduction of isolate behavior for this child, Mrs. Kelly also reported that Julie's participation in group discussions and her academic achievment

had improved. Most important, the teacher reported a change in the child's attitude and said that since Julie had started joining the group she had become much more open and willing to interact with her classmates.



Number of minutes spent in group activities by a child displaying extreme isolate behavior. Sessions were of 20 minutes duration during both morning and afternoon.

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EXPERIENCE BASED TRAINING PROGRAM: ASSOCIATION WITH PUBLIC SCHOOLS

by

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DeKalb County Schools Program for Children with Specific Learning Disabilities
the Recipients and the Contributors to Teacher Training Institutions
Staff and Students

Briefly, let me describe the setting and the program. DeKalb County is the bedroom county adjacent to the city of Atlanta, expanding annually with new industry, new suburbs, and countless apartment complexes. Previously, 96% white, but now with transitional areas and transitional schools, presently 11% black and 89% white. There are 82 elementary schools and 21 high schools with a school population of 90,000.

The Program for Children with Specific Learning Disabilities began with two pilot classes in 1967 and has expanded to 25 in this school year. Comprehensive planning for the next three years projects a total of 100 classes by 1975-76, with services extended to intervention and prevention in the first year of elementary school and upward to supportive services to high school students.

Three organizational concepts are in the third year of operation for the 1971-72 school year: 1) the Learning Center; 2) the Self-Contained Classroom; and 3) the Resource Teacher. Each of these operates in regular elementary schools. The Learning Center, funded by Title III, E.S.E.A., is based on a plan to document by research which plan or what plans are more effective for a large school system.

The Learning Centers serve children who are enrolled in their regular classes and come to the centers for one-half of their school day. These learning centers also serve as demonstration and training sites for university students. Each center is staffed with a resource teacher, two teachers with self-contained afternoon and morning groups, serving twice the number of children. A teacher assistant works with the three learning center teachers to supplement their

services. Children are returned to their regular classes by school bus. In the Self-Contained Classrooms, children are enrolled for the entire school day. Precluding that, service is given to a minimum of six and a maximum of ten students.

The resource teacher concept is based on work with children individually or in small groups for forty-five minutes daily. Children remain in their regular program for the major part of their school day.

All these units operate according to an individual prescription for each child's training. Remediation is provided by an instructional program in the language arts and mathematics. Each of the units has the services of a consultant, a psychologist, and a curriculum coordinator.

Data have been collected on the achievement gains of the three class types and specific age groups. We have found that children can be served in a number of different models and achieve at a comparable rate. The first year data revealed no significant differences in the mean achievement by class type on the three measures of the WRAT. On age groups, the age group 9-0 to 9-9 showed a statistically significant gain over other age groups in the measure of reading. There are some differences to be found in the second year data. Althoug no significant difference was found to exist in the reading achievement of students in the four class types, an .05 difference in spelling achievement was found, which may be accounted for by lower average gain of P.M. group. The higher average gain of A.M. students may account for the significant difference of .01 for arithmetic. One-way analyses of variance were computed to determine if any differences existed in the mean gain scores of students by age group. Results

indicate there were no significant differences found in reading, a significant difference at .05 level in spelling and arithmetic. Inspection of the data suggests that low average achievement scores of the 10.0 to 10.9 age group in spelling and the high average scores of the 9.0 to 9.9 in arithmetic may account for these differences. Further analysis of the data suggests that children below 9.0 obtained positive scores and losses occurred increasingly with children older. We might conclude that all programs were profitable for children up to age 10.

Our study of the different class types does suggest that L.D. children can be served in various types of class organizations. It is well to point out that there is a selectivity factor in placing children in one type over another type, because of the specific needs of the child. This suggests that in planning a total program, there is need for the different classroom organization patterns.

We believe that the opportunity to expose students in training to a variety of organizational patterns serves a very useful purpose. It is in this way we contribute to the teacher training program.

As recipients of the cooperative effort, our teachers and staff have the advantage of the stimulation and interaction that the students and professorial staff contribute in service to the program.

My colleagues here on the panel have planned and for the second year are planning a summer demonstration program with us. This provides services to children and observation and internship facilities for the university. These gentlemen contribute to our in-service, consult with us on research, and assist us with

program development. The university teaches off campus courses in our central Learning Center and thus brings the course to our teachers.

SESSION 93
10:30 - 12 NOON FRIDAY
FRANKLIN ROOM, SHERATON PARK HOTEL

THE RELATIONSHIP BETWEEN ABNORMAL ACTIVITY OF THE SYMMETRIC TONIC REFLEX AND LEARNING DISABILITIES IN CHILDREN

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This study, done at Purdue University, investigated the nature and extent of the relationship between abnormal activity of the Symmetric Tonic Neck Reflex and learning disabilities in children of elementary school age.

The Symmetric Tonic Neck Reflex (TNR) is one of several tonic reflexes which are seen early in infancy. These reflexes affect the pattern of muscle tone in the body. Each such reflex contributes to the infant's motor development by facilitating achievement of motor skills from head raising through walking. Each is inhibited in turn by the infant as he progresses and diminishes rapidly in strength until it no longer can influence or modify his voluntary movements.

The Symmetric TNR is evoked by changing positions of the head and neck in relation to the body. When the head is tilted back, tone is increased in the muscles which straighten the elbows and those which bend the hips and knees. When the head is bent forward, this pattern is reversed - the elbows bend and the hips and knees straighten. It is the Symmetric TNR which helps pull the child from abdomen into the hand-knee position in preparation for creeping. However, he must then inhibit the reflex and hasten its diminution in strength if he is to progress to efficient locomotion on all-fours. Good creeping requires that the child hold his head up, while bearing a good portion of his weight on one arm, then the other, and while alternately straightening and bending his hips and knees.

If the child for any reason cannot or does not adequately inhibit the reflex, he progresses to walking but persistent reflex activity continues to influence all voluntary movement, distorting proprioceptive (tactile-kinesthetic) feedback and interferring with the processes of sensory-motor integration.

The study compared the incidence and degree of behavioral signs of abnormal Symmetric TNR activity as observed in the test performance of a group of elementary school children achieving at C level or above in regular classrooms and that of a group of children in the same age range who were referred to the Purdue Achievement Center for Children because of learning difficulties. Children of both groups were within the age range of 6 years, 1 month through 12 years, 3 months. None showed evidence of physical or genetic abnormality.

The test administered consisted of two developmental tasks:

1. Creeping forward on hands and knees over a distance of 20 feet against manual resistance applied at the shoulders, and
2. Creeping backward over the same distance against manual resistance applied at the buttocks.

An illustrated check sheet was used to record observations of test behaviors. Behaviors checked were then compared to behavioral criteria for reflex-free test performance and for four levels of reflex-modified test performance. There was a possible range of scores from 0-96. The size of the score directly reflexed the presence and degree of reflex modification of test behaviors.

The achieving children scored between 0-36. The learning disabled scored from 0-96, but 75% of the learning disabled children scored 40 or above.

Statistical evidence showed no relationship between chronological age and amount of reflex activity. It appears, then, that after the age of 6, increasing age alone is not sufficient to inhibit reflex acitivity to a mature level.

Statistical evidence also showed no significant relationship between IQ and level of reflex activity. This would indicate that inhibition of reflex activity is not susceptible to intellectual processing alone.

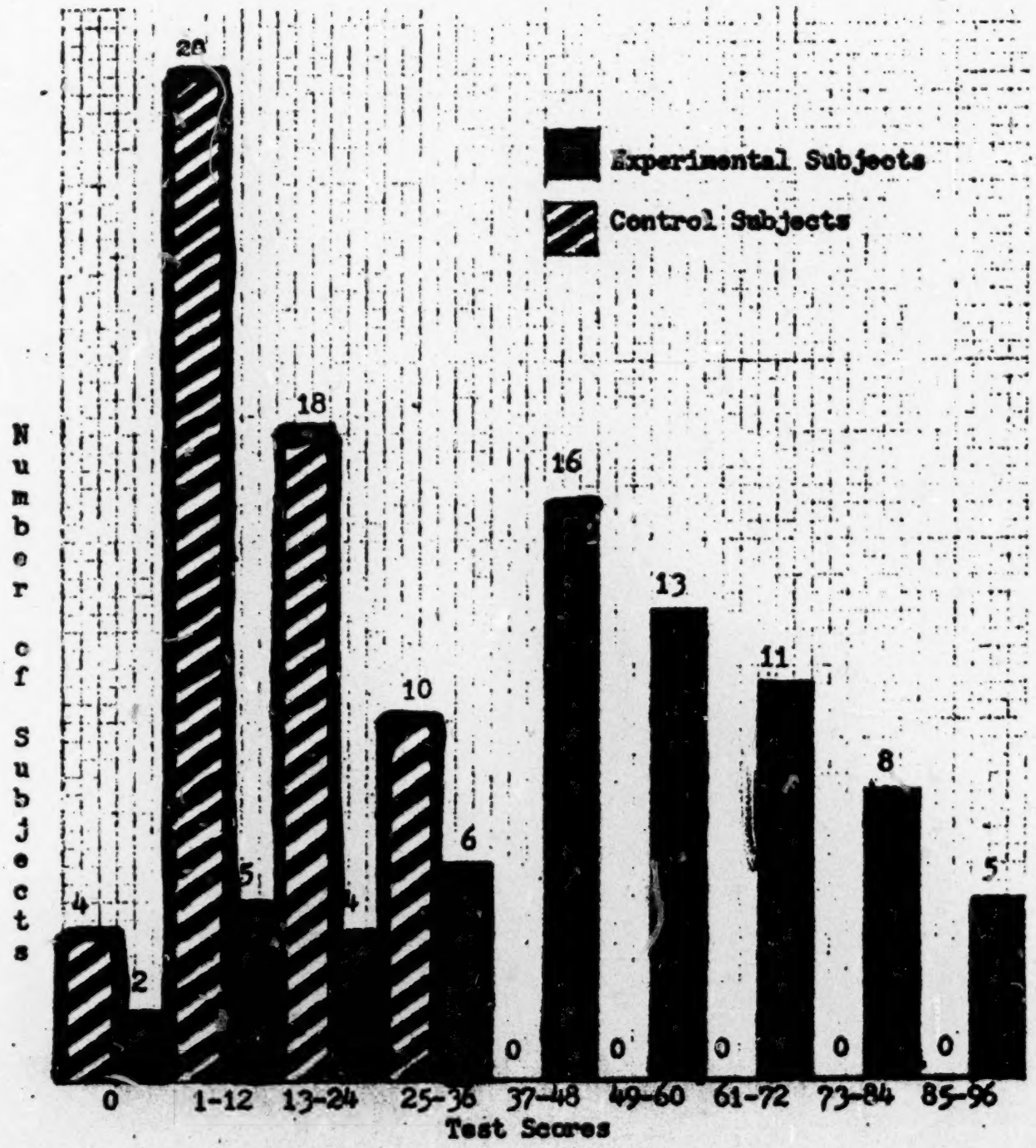
These findings do not imply that all children with learning disabilities have persistent activity of the Symmetric TNR, nor do they imply that all learning disabilities are due to abnormal Symmetric TNR activity.

It does show that a significant number of learning disabled children exhibit persistent Symmetric TNR activity at a level critical to the processes of sensory-motor integration. This opens a new door to remediation of these children.

A training program designed at the Achievement Center was directed toward helping the child inhibit the Symmetric TNR and achieve efficient and automatic basic patterns of locomotion. Activities normal to that developmental period were selected: rocking on hands and knees, creeping forward and backward, and walking forward and backward.

These activities are structured and resisted to insure intensified consistent feedback from the movement. One accepted neurophysiological principle states that an organism tends to repeat those movements which are most satisfying. By resisting the child's movement through space he is stimulated by stress to develop the most efficient pattern of movement in order to complete the task with the least amount of effort - and therefore in the most satisfying way.

This program has been in use at the Purdue Achievement Center for Children for about two years. When carried out with a reasonable degree of consistency by the parents, results have been highly satisfactory. Reducing reflex activity also reduces the distortion of feedback from movement and frees the child's processes of sensory-motor integration to proceed without interference. Learning is accelerated and the child can begin to "catch up". He continues to need special help to "fill in gaps" in his academic learning and to help him progress at his maximum rate - but both he and his teacher are relieved of the burden of frustration.



Distribution of Test Scores.

Contributions of Perceptual and Conceptual Skill Training to Ability to Discriminate and Reproduce Geometric Form [1]

Dorothy M. Major [2]

Reproduction of geometric form has long been of interest in clinical and educational settings because of observed relationships between performance on the task and academic achievement. Developmental and remedial training programs have been based primarily on the assumption that exercises to improve perceptual and motor skills will improve perceptual motor performance, and by inference, academic achievement. However, several investigators have questioned whether perceptual and/or motor interpretations of inability to reproduce geometric form are adequate. David Olson, in particular, questioned the perceptual interpretation by stating that copying of geometric patterns, conventionelly labeled perceptual, may, in fact, be more adequately considered representational or conceptual.

The present study primarily investigated the relative contributions of perceptual and conceptual components to ability to reproduce a diamond from memory. Two major hypotheses regarding the nature of the ability to reproduce form were contrasted. Maccoby and Bee's "number of attributes" hypothesis was contrasted with Olson's hypothesis which requires a system of representing or coding

[1] Address presented at the 1972 CEC conference, Washington D. C. Material based on an unpublished dissertation.

[2] Author formerly a student and doctoral candidate at University of California, Los Angeles and California State College, Los Angeles. Presently, the author is a psychologist for the Denver Public Schools, Denver, Colorado.

the perceptual attributes.

The "number of attributes" hypothesis was originally proposed by Maccoby and Bee(1965), who believed that the subject must make use of more attributes of the model to reproduce a figure than he is required to use to discriminate the model from other figures. Maccoby (1968) later modified the "number of attributes" hypothesis stating that holistic perception suffices for discrimination of simple geometric forms, but for making a copy it does not. She believed that the more attributes of a stimulus the child has discriminated, the more accurate a copy his drawing would be.

While accepting the Maccoby hypothesis as a partial explanation of the lag between recognition and reproduction, Olson (1968) proposed that form reproduction requires conceptual, symbolic representation, or coding, in addition to perceptual recognition of attributes. This representation, he stated, comes about through verbalization of the perceptual attributes so as to cause the child to recognize how the parts relate to the whole. Olson stated that his system of representing or coding could occur ". . . either by an independent invention on the part of the child or by suggestion from an adult."

To summarize the two positions and the predictions which can be made from each, Maccoby proposed essentially a per-

ceptual position in contrast to Olson, who proposed essentially a conceptual, symbolic position. Both assume adequacy of motor skills. For copying, the Maccoby hypothesis requires that the child perceptually discriminate the attributes of a figure, fractionate the figure, and' differentiate its parts while maintaining the relation of the parts to the whole. Given practice in these aspects, that is, discrimination, fractionation, and differentiation, the child whould be able to reproduce a figure accurately. Olson argues that the Maccoby hypothesis is incomplete, suggesting that discrimination, fractionation, and differentiation of a stimulus are necessary conditions for reproduction, but are not sufficient. Accurate reproduction of form, according to Olson, requires a verbal symbolic process of representing, or coding, the perceptual properties in a system relating the parts to the whole as well as perceptual recognition of the attributes. From the Olson hypothesis, it would be predicted that practice in verbalizing the perceptual attributes and their relationships would assist the child to improve his accuracy in figure reproduction.

Adopting the Olson position, the major hypothesis under investigation was that accuracy in reproduction of complex form, specifically a vertical diamond, was dependent upon ability to conceptualize and verbalize the distinctive, invariant, and critical attributes of a diamond A corollary

to this hypothesis was that perceptual discrimination, fractionation, and differentiation alone were not enough to allow accurate reproduction of form. A secondary hypothesis was that a child who discovered and verbalized the critical attributes for himself would conceptualize and utilize these attributes to reproduce a more accurate diamond than that drawn by a child for whom such attributes had been verbalized by an adult, a prediction in agreement with advocates of discovery and active learning.

Seventy-five beginning first grade boys who could not draw an accurate diamond on any of three attempts were assigned to one of five groups. Fifteen boys who could draw three of three accurate diamonds were considered as a Contrast group.

Initial screening excluded those children who could already draw an accurate diamond. Secondary screening excluded boys with gross visual, motor, or perceptual discrimination disabilities, gross immaturity, and those boys repeating first grade. Pretesting served the dual function of initial screening and determination of initial ability on tests of reproduction of form and fine discrimination.

The Fine Discrimination Test consisted of 60 drawings designed to illustrate the attributes of a vertical diamond. Both accurate and inaccurate representations were used. Half of the drawings were of whole diamonds. The other

half were drawings of one or more pieces of diamonds. Pieces of diamonds were of the size and in the location in the drawings to match the appropriate portion of a completed diamond.

There were five training groups: two control and three experimental. Training procedures were derived from the theoretical positions under study for experimental groups. Training for the control groups was used to control for practice in drawing and exposure to diamonds as factors in imporved performance. Subjects were seen individually for training.

Subjects from the Control-Drawing group were given a non-relevant training task of sorting animal rummy and authors playing cards. The Control-Exposure group was required to sort 4 x 6 inch cards on which the 60 figures of the Fine Discrimination Test were drawn. The sort was on the basis of accuracy or inaccuracy of the drawings when compared to the subject's memory representation of an accurate diamond shown to them prior to training. The Maccoby group boys were also required to make judgments on the accuracy or inaccuracy of the 60 figures. However, they were given visual and verbal confirmation or correction of their judgments. Following verbal feedback, a standard, red diamond was superimposed over the drawing so subjects could make visual comparison of the stimulus and an accurate diamond. On drawings illustrating axis distortions, a card

with true vertical and horizontal axes was superimposed over the stimulus figure and the standard, red diamond. Nothing further was said or done for this group.

The Olson I and Olson II groups followed the same procedures as the Maccoby group, but verbalization of the attributes was added to the training procedure. The Olson I group was given the reason the drawing was inaccurate by the examiner. The Olson II group was asked to verbalize the reason for themselves. Subjects were cued by questions which lead them to note and verbalize the reason.

Immediately following training, subjects were given Drawing and Fine Discrimination posttests. When the post-tests were completed, boys were required to answer a series of questions leading them, without cueing, to verbally describe the requirements of a good, or accurate, diamond. The final phase of the study was an examination of fine discrimination, motor control, drawing, and verbalization abilities of those children excluded from the study on the basis of an already well developed ability to reproduce an adequate diamond.

Results

Means of treatment groups were comparable prior to training, while the Contrast group drew significantly better diamonds. Following training, group means differed from one another; however, differences were not large enough to be statistically significant. None of the groups per-

formed as well as the Contrast group although some individual subjects did, presumably as a result of training. The most plausible explanation for failure to show differential training effects was that within-group variability was so large that it tended to mask the between-group effects. However, one highly significant training effect was demonstrated for the Olson I group. This group, trained using adult-verbalization of attributes, performed significantly better on the posttest than they had on the pretest. Two factors of interest appeared: (a) all subjects in the Olson I group improved on posttest scores while all other groups had some subjects who improved and some who performed more poorly; and , b) variability for the Olson I group was reduced on the posttest and was considerably less than variability in other groups. The most dramatic change, however, was a 107 point improvement by a subject in the Olson II group, the group where subjects verbalized the attributes of a diamond for themselves. It should be pointed out that drawing improvement occurred following 12-15 minutes of training and exposure to 60 cards illustrating the diamond's attributes.

Results were interpreted as at least partial support for Olson's position that reproduction of form requires conceptualization of the critical attributes of a diamond as demonstrated through verbalization of the attributes.

Adult verbalization appeared to assist by focusing attention on relevant dimensions and relationships of a diamond. Failure of the child- verbalization condition to produce comparable significant improvement following training may have been due to poor ability of the boys to articulate attributes at a verbal level. Attempts of boys to explain reasons why diamonds or diamond-parts were inaccurate frequently led to perceptual explanations, that is, pointing or drawing in the air. All groups had difficulty describing characteristics responsible for "diamondness" during the questinn phase. However, the Control-Drawing group, a group not exposed to cards illustrating the attributes of diamonds, gave only half the number of accurate responses given by groups exposed to the attribute cards.

Prior to training, experimental groups were statistically comparable on the discrimination task, also. Following training they were not; thus, differential effects of training on discrimination performance were demonstrated. All experimental groups were superior to the control groups, but the experimental groups did not differ from one another. In addition, all experimental groups performed significantly better on the posttest than they had on the pretest, while the Cnntrol groups did not. The Contrast group was found to be superior in discrimination performance to all but the Olson I group on the pretest but training enabled the experimental groups to perform as well as the Contrast group on the discrimination posttest.

Thus, ability to discriminate accurate from distorted diamonds and diamond-parts was improved following training provided such training: (a) used cards relevant to discovery of the critical attributes; and, (b) supplied confirmation or correction of discrimination judgments. Neither exposure to critical attributes nor discrimination judgments alone were sufficient to allow improvement. Verbalization of attributes added nothing to improved discrimination performance beyond that achieved by allowing comparison of stimulus cards with an accurate, standard diamnnd. The critical factor appeared to be perceptual focus of attention on critical attributes of a diamond following judgments of accuracy of drawings. Correction of response may have provided the child with new alternatives which lead to improved ability to make subtle discriminations. Discriminations were more accurate when confirmation or correction immediately followed responses during training. Results were interpreted as supporting Gibson and Gibson's (1955) contention that learning to detect or respond to new variables in a stimilus and improvement in attention to the critical variables leads to increased precision in perception.

The results of the study suggested that both motor control and discrimination ability had a negligible influence on ability to draw a diamond once some unidentified minimal level of performance in these skills was achieved.

Implications

Several implications for education are suggested. (a) The practice of making inferences about a child on the basis of inability to reproduce geometric form was called into question. Diamond drawings were stable when a child could draw accurately; however, drawings were quite unstable and inconsistent when drawn by children as yet unable to draw diamonds well. (b) The present focus on perceptual and motor training as the major bases of developmental and remedial instruction of perceptual motor skills was also questioned. Training of these skills may be inadequate to improve the perceptual motor skill of reproduction of geometric form. The necessity for a conscious and deliberate emphasis on conceptual training is implied by the results of this study, such training furnishing verbal cues as to which attributes are critical, which perceptual characteristics of form whould be coded, and which can be safely ignored. (c) Components of training programs which seem to improve discrimination performance were illustrations of diamonds emphasizing the form's critical attributes and their interrelationships, discrimination judgments, and visual comparison of stimuli with an accurate standard form so judgments can be confirmed or corrected. A verbalization element was not seen as important to discrimination.

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BEHAVIORAL ASPECTS OF LEARNING DISABILITIES

Paper read at the C.E.C. Convention,
Washington, D.C., March 22, 1972

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Director, Center for Educational
Disabilities and Professor of
Psychology, University of Guelph

Learning disabilities have been attributed - apart from social disadvantage - in the main to low intelligence, perceptual handicap or other specific dysfunction. Little attention has been given to the way in which the child sets about learning.

The association between behavior disturbances and learning failure has provoked an unresolved controversy as to which is primary - primary in this sense meaning that it was there in the first place and presumably one of the determinants of the learning disability. Our studies at Guelph have generated a theoretical model in which a small number of mostly constitutional types of behavior handicap - impulsivity, hyperactivity, extreme apprehensiveness - figure largely among these primary determinants. Alongside them, also considered primary in this sense, are cultural and other environmental disadvantages - bewilderment within the foreign culture, divergence of goals and a cultural impulsivity which may have the same presenting symptoms as impulsivity of a neurological origin.

The academic failure caused by these primary factors generates in turn secondary reactions which aggravate the initial learning handicap. They take the form of avoidance and compensations - the seeking of distractions, clowning, disruptiveness, or on the other hand passivity and a retreat into a pseudo-retardation.

Both the primary and secondary behavior disturbances extend into the learning situation as inappropriate learning styles, interfering with or inhibiting the cognitive processes in a way that retards conceptual development. Following J. McV. Hunt, 'intelligence' is seen as the end-product of the strategies used by the child from his earliest years for processing information. This line of thought is carried to the point where the variable of 'intelligence' gives way to more empirically based concepts in the form of observable and recordable styles of learning behavior.

This approach is not limited to those who fail in the ordinary school. Any teacher with special school experience will have known children with such severe behavioral handicaps that it is impossible even to begin to teach them to read or to teach them anything else. They may never be in the same place for more than a minute or two, or be so unresponsive that one can make no headway at all. Many such are found in schools for the trainable retarded. We cannot discover what their mental potential is because we cannot get through the behavioral barrier. As we find them, they are, in a formal sense, ineducable. Parents give instances of their 'intelligence' but no one takes any notice of these awkward, isolated contradictions.

It is tempting to conclude that, but for their behavior problems, these children could be of normal intelligence. But to put it thus would be confusing the issue. Being intelligent is doing intelligent things and being stupid is doing stupid things. It is really all a matter of behavior.

It is instructive to observe the spontaneous ways in which a representative group of five year old children tackle tasks. Some set about learning in an admirable way, without needing to be taught how to do so. Others, in varying degrees, do

not know how to learn. Whatever intelligence they possess is not being used properly. In effect, those who of their own accord use good learning styles come to be looked upon as the intelligent children, and the others as the not so intelligent. But this way of looking at individual differences is both unhelpful and unprogressive. If instead we train ourselves to observe the different learning styles that children adopt, we naturally begin to ask ourselves whether we can improve these styles, that is to say, teach them how to learn and make them what is ordinarily called more intelligent.

As a result of the observation of successive groups of slow learners, 14 categories of ineffective learning style were identified and defined. They have been incorporated in an assessment instrument, called the "Child's Learning Behavior". It was subsequently used as a means for training teachers to identify those behaviors which are detrimental to learning and as a means of reporting such behaviors on the referral of a child. Each of the faulty learning styles is described at three levels of severity. The instrument can thus also be used for the recording of the effects of remediation.

The essence of our approach was thus to identify common faults of learning style and to devise means of correcting them. These faults correspond to certain well known types of temperament. I can show what I mean by briefly describing two main types which account for perhaps eighty or ninety percent of learning disabled children.

First there is what we call the 'unforthcoming' child. He decides in advance that learning is too difficult for him. He is frightened by anything which appears strange or complex. He becomes petrified when you try to make him give an answer, and you can hardly get a word out of him. At best he will half give

an answer and watch for encouraging signs from the teacher. Learning to him is a real anxiety. But one thing he does learn; if he can't do a task the adult helps him. If the teacher thinks he hasn't the ability, she won't make demands upon him, so he takes refuge in dullness. His retreat into incompetence saves him from being pestered by people who try to make him face up to what seem to him difficult problems. So he gets relief from his anxiety. And the teacher's off the hook; by accepting his dullness at its face value her professional competence is saved. If the school calls in the psychologist, he's fooled too. The low IQ he accords him is a passport to a life of easy dependence.

The truth is that his dullness is a false adjustment to life which, with his handicap of temperament, brings him rewards. We have conditioned him to be dull. But we can't just call his bluff. He is suffering from a real handicap, but one of temperament rather than one of intellect.

At the opposite extreme is the 'inconsequential' child. He is willing to try anything - too willing. He cuts out an essential preparatory stage of behaviour, i.e. thinking what the consequences of his behavior will be. He rushes into everything, guesses, doesn't use his eyes as we say. He suffers from a general maladjustment or handicap of temperament which is seen as distractibility, impulsiveness, inattention. In recent years he has come in for quite a lot of professional name calling, often being diagnosed as minimally brain damaged or perceptually handicapped. There may indeed be some neurological damage, but the handicap we can observe is one of behavior, of the way he sets about or doesn't set about learning. He acts without giving himself time to think things out. We may say that he short-circuits his intelligence.

The same can be said about his perceptual ability. If he doesn't give himself time to look properly he doesn't get the information needed for learning and solving problems. He may or may not be perceptually handicapped in a physiological or neurological sense. Just as we cannot tell what intelligence potential the unforthcoming child has because he is not using it, so we cannot assess the perceptual ability of the inconsequential because he doesn't attend to the tasks.

Nor for that matter is the inconsequential child fully using his intelligence. When he guesses rather than thinks he cuts the higher parts of his brain out of the operation. Unfortunately for him only the very simplest tasks can be solved by guessing. The result is that he gets discouraged and becomes an avoider. Instead of getting on with his work he looks around for something else to interest him, something to get him out of the classroom or away from the task.

It was observations such as these which prompted our new approach to teaching. After diagnosing these sorts of learning disability, the natural thing is to try to think of means of counteracting them.

The ideal age at which to begin to train a child in good thinking strategies is probably well below that of starting school. But only a few children attend nursery classes and the detection of those who are likely later to show learning problems is complicated by widely differing milestones of development. In practice, therefore, kindergarten is a good age to launch a detection and prevention programme and our experimental work at Guelph has confirmed this. Over the past three years we have built up the Flying Start Learning-to-learn program (Stott 1972) as a means of training children in good learning styles. It has been used extensively with kindergarten children referred by

their teachers as likely to run into difficulties when they get into Grade one, and with students in Schools for the Trainable Retarded.

So far our findings are qualitative, although evaluative experiments are in progress. With most learning-disabled Kindergarten children we find that within a month or so, spending two half-days a week in our Centre, the conditioning process works rapidly; their learning can be re-styled within this time.

With the retarded, whether they are what used to be called the feebleminded, or mongoloids or brain-damaged, we can say with confidence that none of them we have worked with was found to be functioning at anywhere near his capacity. As the front of retardation that they present breaks down, so they gain momentum and become motivated to learn. What they apparently could not do one week they do easily and with zest the next. It is not a question of theirreaching their limit - the idea of a limit or a potential is part of the fatalism of the traditional concept of intelligence. Some, of course, progress very slowly because their behavior disturbance is based upon neurological damage that does not yield to a conditioning program. A few reveal at an early stage that further work with them is unprofitable for the time being. But one generalization we can confidently and emphatically make: it is impossible to know how far a child will go until you work with him to correct his learning style, so that he brings his abilities into play. The front of retardation - often developed as a defence, a retreat, or the acceptance of a role - can never be taken at its face value. The results of formal tests of intelligence or of perception will be misleading in a pessimistic direction, and may relegate a child to a program which fails to stimulate his thinking powers because everyone is convinced of his deficiency.

The materials of the Flying Start Learning-to-learn Program begin with exceedingly easy activities. The battle is half won if the child solves any problem, however simple, by himself - such as the joining of the two halves of a boldly drawn picture placed almost joined before him. The tasks are graded by such small steps that he progresses to the next one with the expectation, and realization, of success. His attitude changes from one of 'I can't do it' to one of 'I can do it'. The activities are entirely in the form of puzzles and games, so designed that they are highly motivating, but also that the child succeeds only when he uses a good learning style. The Unforthcoming child develops the expectation that what he attempts he can do. The impulsive child discovers very quickly that guessing doesn't pay. It may, at the beginning, be necessary to use formal behavior modification techniques, but once a child can be induced to participate he is soon carried along by the appeal of the activities.

We don't tell children that they have to attend, to use their brains, to have a try. Such nagging at best will be ineffectual, at worst it can force a child to strengthen his defences against being taught. They learn productive learning styles by experience. They find that looking closely, thinking things out, having a good try, brings success.

As soon as the children have learnt to organize their learning behavior and to cooperate with others, the teacher leaves them so far as possible to play the games by themselves. All the activities are self-correcting either by the individual child, or by his partner or his group.

Copies of the assessment form, 'The Guide to the Child's Learning Behavior', can be obtained from our Center for Educational Disabilities at the University of Guelph, Ontario.

Our Flying Start Learning-to-learn Program is demonstrated in the film "Learning-to-learn", and the Kit is now available.

Stott, D.H. Flying Start Learning-to-learn Kit
Wardell Associates,
49 Pinckney Street, Boston, Mass. 02114, and
Gage Educational, P.O. Box 5000, Agincourt, Ontario

The documentary film (16 mm color, 23 min.) is available from the above.

The Use of Distributive Practice to Modify the Spelling Performance of a Fifth Grade Student

Herbert J. Rieth Jr.
Kathleen Wood

The research investigating spelling behavior has focused primarily on identifying the correlates of spelling disabilities. Otto and McMenemy (1966) reviewed many of the research studies and found that the correlate most frequently related to spelling disabilities was the lack of adequate study skills. As a result of these findings the present study was initiated to experimentally analyze the effect of a study procedure on spelling achievement.

Setting and Subject

The data was collected by Mrs. Kathleen Wood who was a fifth grade teacher at Tecumseh North Elementary School which is located in Tecumseh, Kansas. Tecumseh is a small rural community located in the county area just east of Topeka, Kansas. The subject (Dan) was a male fifth grade student who was selected because of consistently attaining low scores on weekly spelling tests.

Measurement

In order to assess the effectiveness of the procedure designed to change Dan's spelling performance the teacher systematically recorded the percent of correct spelling scores attained on weekly spelling tests. This is an example of direct measurement which is used when the behavior results in a direct product. The advantages of this type of measurement include the ease of quantifying the data,

the direct product and teacher utility.

A reversal design was used. Reliability was collected in each condition and in each case was 100%.

Method and Results

Baseline

During baseline the teacher simply recorded the number of correct responses attained on the twenty item weekly spelling test. The tests were given on Friday and they covered words which had been assigned on the previous Friday. The words were taken from the regular spelling text which was Basic Goals in Spelling (1968). During this condition the percent of correct responses ranged from 0-10 with a mean of 2%.

Experimental Condition I

Before applying the experimental procedure we seriously considered giving the student alternate academic materials which were commensurate with his 2.9 grade level spelling score attained on the Wide Range. However, we decided to continue to use the fifth grade text in order to assess the effectiveness of the experimental procedure. The experimental procedure, which was labeled distributive practice, consisted of having the teacher divide the twenty words in the spelling unit into four groups of five words each. The words were written on 3x5 cards and the student was given one group a day. Dan was asked to study the words and told that he would be given a quiz the following day. On the following day either the teacher or another student administered the quiz. This procedure was repeated daily until Friday when Dan and his peers took the weekly spelling test consisting of twenty

words. The percent of correct responses ranged from 43-100 with a mean of 67%.

Reversal

After six weeks baseline conditions were reinstated in order to determine whether the increase in the number of words spelled correctly was caused by the distributive practive procedure. Consequently, the daily word lists were discontinued despite inquires made by the student regarding the reasons for discontinuing them. The teacher simply stated that she had forgotten to prepare the list and besides Dan was doind so well that he didn't need the daily list. After a two week reversal the study was terminated becasue the school year ended. The scores recorded in this condition were 65% and 55%. The data indicated that the distributive practice procedure was causally related to the increase in the number of words spelled correctly. Therefore the study procedure was effective in changing the spelling performance of the student.

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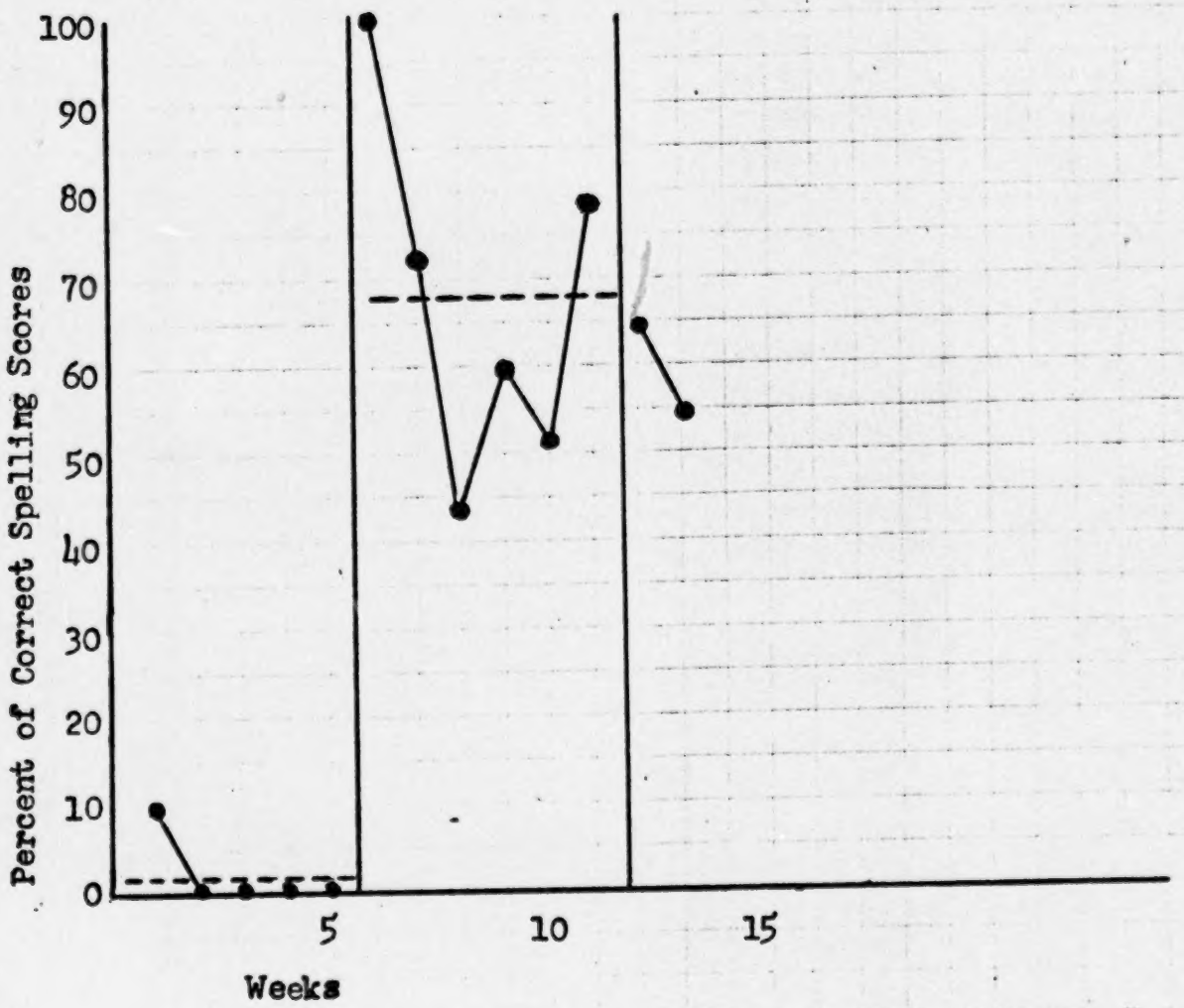
Spelling Scores of a 5th Grade Student - Mrs. Wood



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Title

Development of a Prescriptive Network for Learning Disabled Children

David A. Sabatino and James E. Ysseldyke
The Pennsylvania State University

This Demonstration project is supported by Grant OEO-2-700051 (699) and Project 482919 of the United States Office of Education, Bureau of Education for the Handicapped.

Self-contained special education classes have failed miserably in achieving either increased academic achievement or individualized instruction tailored to "meet the needs" of the children they serve. Classes for "learning disabled children" have been established under the faulty assumption that categorically defined handicapped children are best served by homogeneous instructional techniques and materials. We in special education certainly realize by now that medically borrowed labels which we have converted into administratively convenient categories lend very little to the type of instruction we provide children. There is no instructional homogeneity in most classes of educable mentally retarded, emotionally disturbed, brain injured and learning disabled children. Special classes may be more aptly described as instructional nightmares in which a single teacher is expected to perform an impossible task.

What <u>should be</u> special about special education is a continuum of learning environments that permits special educators to focus on handicapped children; learning environments that provide the special educator with instructional options permitting full use of a variety of well developed educational delivery systems. Once this continuum of educational delivery systems is operational, then the age old major dilemma of what instructional method or material can be effectively used is maximized.

It is relatively easy, and currently popular, to critize special education classes. The task confronting special educators in all areas - school psychologists, speech and hearing personnel, reading specialists, and special education teachers - is one of establishing and empirically

investigating the feasibility of creative alternatives. This paper discusses resource rooms as one such alternative.

The model discussed in this paper is currently being used by the rural unit of the National Regional Resource Center of Pennsylvania (NRRC/P). Resource teachers and psychoeducational diagnosticians have been employed to (1) assess specific behaviors (abilities) in an effort to ascertain learner characteristics and establish specific instructional objectives for individual children, (2) prescribe instructional methods and materials to meet those objectives, and (3) continuously monitor children's progress, validate objectives, and validate the methods and materials used to meet these objectives. Figure 1 is a graphic illustration of the steps involved in the diagnostic prescriptive procedures used by the NRRC/P rural unit.

INSERT FIGURE 1 ABOUT HERE

The first question a teacher must ask when confronted with a child who is experiencing educational miseries concerns his ability to perform specific behavioral acts necessary to the acquisition of academic material. Step 1 is the point of initiation for all future activities. A comprehensive seven page teacher referral form is used that contains 40 items grouped under the six categories.

(1) Visual and auditory perception

(2) Short term retention

(3) Long term retention

(4) Academic achievement

(5) Language and motor speech

(6) Classroom adjustment

Each item describes a behavior (ability) or academic skill that the teacher can check according to an appropriate grade level equivalent. Each item or behavioral descriptor is accompanied by an example which serves to operationally define the behavior the teacher is to observe. The teacher referral is required before the resource teachers can officially begin work with a child. On the basis of the results of the referral and subsequent discussion with the referring teacher, the activities in step 1 may lead directly to formulation of instructional objectives based on the behavioral descriptors ascertained from the teacher referral.[1]

Step 2 requires the resource teacher to initiate her screening battery which attempts to measure the same behaviors as those observed on the teacher referral. If an appropriate instructional objective can be established on the basis of such an assessment, that is, if specific strengths and weaknesses can be delineated and isolated for instruction, all further activities between the resource teacher and referring teacher are oriented to validation of objectives and establishment of a continuously monitored curriculum designed to modify the behaviors specified.

If an appropriate instructional objective can not be established in step 2, the resource teacher refers to a project school psychologist. This team, operating under the principle that two heads are better than one, intensify the search for those diagnostic keys that promise to open the door to the learning or behavioral disability.

If specific strengths and weaknesses cannot be identified in step 3 which would allow the establishment of appropriate instructional objectives,

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[1]A copy of the teacher referral can be obtained by writing Dr. Ysseldyke

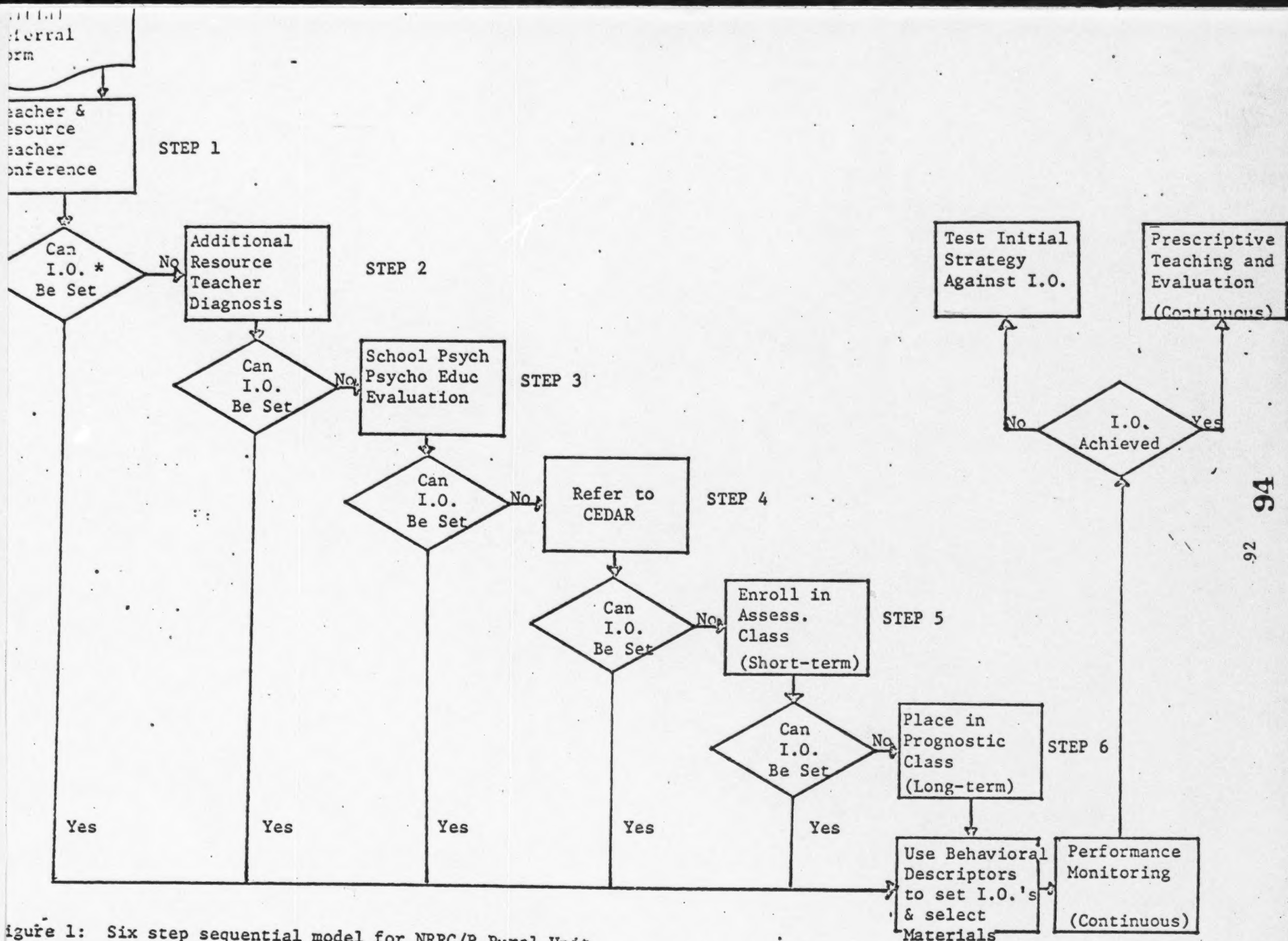
the child may be referred to a comprehensive multidisciplinary diagnostic center - Center for Educational Diagnosis and Remediation (CEDAR) - located on the Penn State Campus. The recommendation of the special educator - school psychologist team in step 3 or the CEDAR multidisciplinary clinic is often for a short stay in an actual diagnostic teaching situation.

Two types of diagnostic teaching situations are available on a short term basis. The child may attend an assessment class in the CEDAR building or in his local school on a full-time basis for approximately two weeks. The project has a portable assessment trailer staffed by two master teachers for just this purpose. The other alternative consists of attendance in the resource rooms for large blocks of individual working time. We have found the latter a relatively poor use of the resource room and recommend the assessment class as the preferable delivery system in step 5.

Step 6 is along term diagnostic teaching station. In both the assessment class and prognostic class, the children are usually seen by two resource teachers. The group size is limited to 5 children. The definition of short and long term is generally kept flexible but short term is under 6 weeks, long term under 6 months. Thus far, no child is kept longer than 6 months.

The key to the entire model is continuous monitoring of student progress toward specific objectives. The continuous monitoring is in terms of the frequencies at which specific behaviors (for example, number of single digit addition problems completed) are demonstrated. This, in turn, allows us to validate the appropriateness of both our objectives and the methods and materials used to attain them. Education has traditionally proceeded in a haphazard manner in its attempts to develop curriculum. This hapazardness

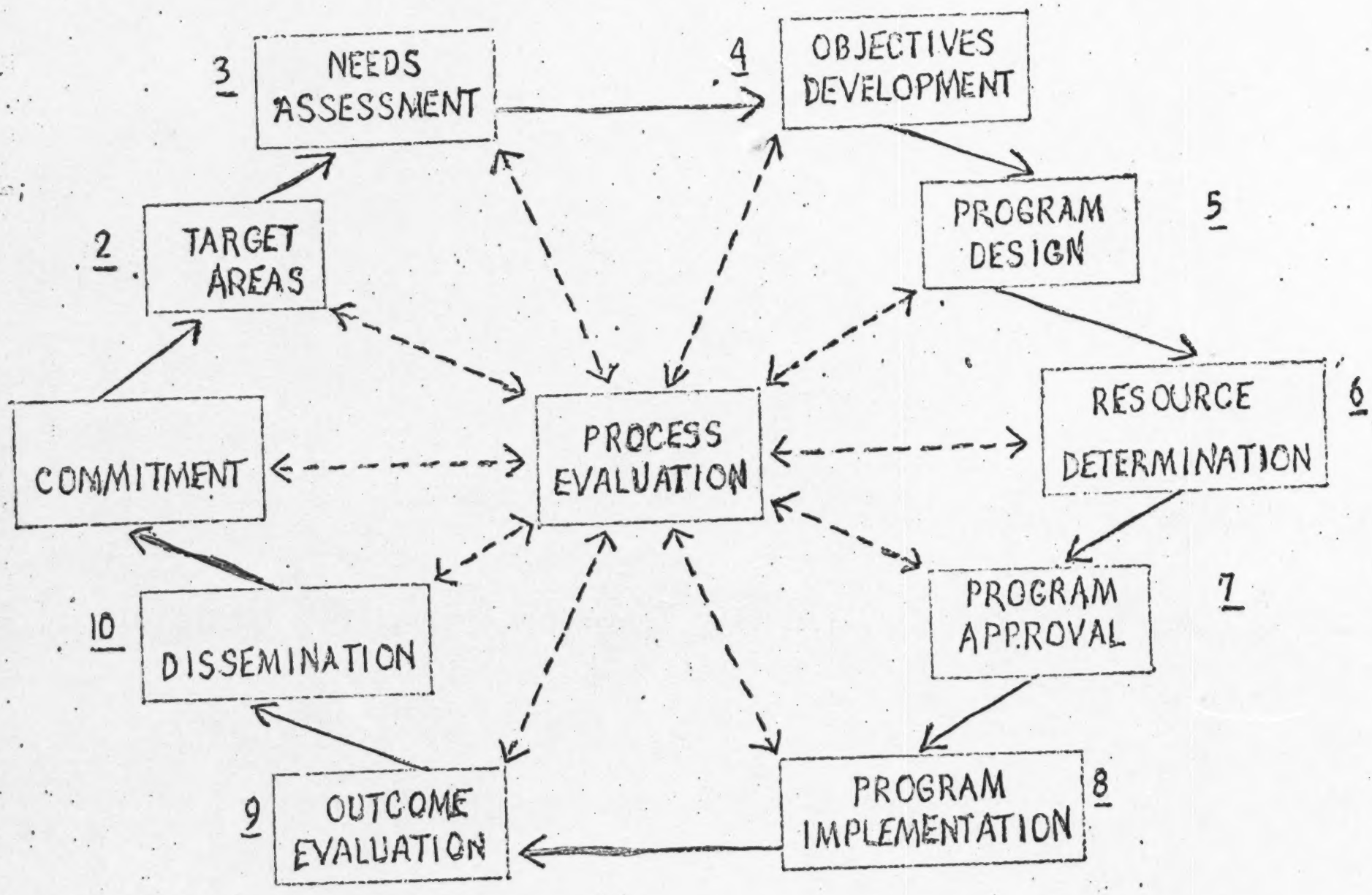
has been amplified in attempts to provide individualized prescriptive instruction for handicapped children. Only by carefully and compulsively recording changes in student behavior as a function of changes in the materials or techniques we prescribe can we move forward technologically and theoretically. That forward movement will result when we reject labelling, categorization and resultant pigeon-holing in favor of sound psychoeducational planning; when we reject hypothetical constructs and unverifiable causes, looking instead at the specific behaviors involved in the learning process; and when we evaluate our procedures and attempt to validate the curricular decisions we make for handicapped children.



igure 1: Six step sequential model for NRRC/P Rural Unit

.O. = Instructional Objective

PROGRAM DEVELOPMENT



Attachment

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Causes for Irrelevance

I. Failure to match teaching procedures to childrens' learning styles.

II. Use of material that is outside or poorly related to the learner's knowledge of physical realm of experience.

*III. The use of teaching materials and methods that ignore the learner's feelings.

* IV. The use of teaching content that ignores the concerns of learners.

*These two are the most neglected areas.

The Three-Tier Curriculum

I. Reading, computation and writing skills--basic information in the social sciences, science, language, and major concepts of specific disciplines that are highly individualized.

II. Drawing latent talents and abilities from the learner (highly individualized) calls for the development of individual creativity and the exploration of interests.

III. Group-inquiry curriculum--social issues and problems that are related to self, and an exploration of self and others in terms of the thread of commonality that runs through the personal issues. Inherent in this tier is the development of personality, skill in interpersonal relations, and the awareness skills of identifying, articulating, and evaluating his own feelings, concerns, and opinions, and comparing them with those of others in a group.

A Model for Developing a Curriculum of Affect

I. Identify the learners.

II. Identify shared concerns.

Fundamental differences between concern and interest must be understood. Interests are only superficial clues to roots of uneasiness or anxiety in the learner.

A. Self-image
B. Disconnectedness
C. Control over one's life

III. Diagnosing underlying factors.

Behavioral changes are suggested by the diagnosis of learner's concerns as expressed in their statements.

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IV. The organizing ideas:

A. You use people, things, and events to tell you who you are.

B. Some people, things, and events are more important to you than to others.

C. The most important ones are those you use most often in judging yourself.

D. It is important to know what you are using to measure your self-worth.

E. Certain things, people, and events are important to you because of:

1. Where you live and who else lives there,
2. What you think is good for people,
3. The fact you are you.

V. Types of learner's content.

A. Experience related to persistent concerns as a growing person.

B. Learner's feelings about his experiences related to his major underlying concerns.

C. What he has learned from the social context in which he lives.

VI. Learning skills.

A. Basic skills (diagnosis is necessary).

B. Learning to learn.

Analyzing a problem and identifying its causes. Learning has to deal with someone who has a different point of view, devising and trying out alternatives to situations, and evaluating the results.

C. Self and other awareness skills.

1. Recognize and describe what is happening to him, especially in terms of feeling and behavior.

2. Understand how others see, and describe what is happening to them.

3. Compare his feeling and behavior responses with those of others.

4. Analyze the varied responses and their consequences.

5. Test alternatives.

6. Make decisions.

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VII. Teaching procedures.

A. Close matching of procedures with the learning style of a particular group of students.

B. Selection of procedures that will have the most effective affective results.

VIII. Learning style.

A. Insight provided by the growing body of published work in general learning theory:

1. concrete and/or abstract structure
2. informal induction or deduction
3. direct confrontation or request approach
4. pacing is important

B. Teaching procedures.

1. involve actual experience
2. multi-age teaching
3. evaluation

THE EEG AS A PREDICTOR OF INTELLECTIVE AND ACADEMIC PERFORMANCE

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Although the electroencephalograph is often used as a fairly routine diagnostic instrument with children suspected of having certain types of learning disabilities, there is no clear rationale for its use in such evaluations. Some investigators report evidence supporting a relationship between the EEG and intellectual abilities in children (Liberson, 1966; Vogel & Broverman, 1964), but equally convincing contradictory evidence has also been reported (Ellingson, 1966; Lindsley, 1938). Similarly, recent studies involving relationships between the EEG and selected academic skills have produced inconclusive results, although there was a slight tendency toward a higher incidence of abnormal EEG's among children doing consistently poor academic work (Pinney, 1968).

Accumulated research findings from investigators in the field of neuro-psychology offer promise as a point of departure in the evaluation of the EEG as a predictor of intellective and academic performance in learning disabled children. There has been more or less consistent evidence for the last forty years that language functions are primarily subserved by the left cerebral hemisphere (Head, 1926; Milner, 1962; Stark, 1961) while nonlanguage cognitive functions are similarly subserved by the right cerebral hemisphere (Denerll, 1964; DeRenzi et al, 1969; Reitan, 1955). In view of these facts, electroencephalographic lateralization of abnormality might reasonably be expected to relate to measures of both intellective (Pennington et al., 1965) and academic (Hartlage & Green, 1971) performance in learning disabled children.

The hypothesis that there would be differential performance patterns associated with locus of EEG abnormality was tested by classifying children on the basis of locus of EEG abnormality, and computing separate analyses of variance among classes on measures of intellective and academic performance.

METHOD

Subjects More than 6,000 EEG records from the outpatient clinic of a large medical center, covering the period 1964-1968 were reviewed, and from this pool were selected records of 111 children who had also received complete intellectual and academic achievement evaluations within a few days of EEG recordings. Ages ranged from 6-16, with mean age 10.2 and mean IQ 72. Although type of EEG abnormality was not a selection criterion, there was typically slowing of the background rhythm, with high voltage regular 2-6 cps rhythms. In some cases there were also spike or spike-wave discharges.

Measurement instruments Intellectual measures were obtained from the Wechsler Intelligence Scale for Children (WISC: Wechsler, 1949) and academic measures were obtained from the Wide Range Achievement Test (WRAT: Jastak & Jastak, 1965). EEG recordings utilized the (ten twenty electrode) system proposed by the International Federation of Societies for Electroencephalography and Clinical Neurcphysiology (Report, 1958).

Procedure All EEG readings were made by one senior staff neurologist who classified the reports on the basis of locus of abnormality into categories of left hemisphere abnormal (N = 13), right hemisphere abnormal (N = 14), diffusely abnormal (N = 54), and normal (N = 30). Psychological testing and EEG interpretations were both done independently, without knowledge of the other finding. One way analysis of variance were computed among verbal IQ, performance IQ, full scale IQ, and each subtest scaled score for the WISC; and for (age corrected) standard scores on reading, spelling, and arithmetic measures on the WRAT, and for age. Totally, 18 discrete analyses of variance were computed. In cases where homogeneity of variance was not demonstrated by Bartlett's test, the Welch test was used.

RESULTS

There were no significant differences among categories of localization of EEG abnormality based on age or on full scale, verbal, or performance IQ scores. Similarly, there were no significant differences among groups on any WISC subtest scores except the coding subtest. Individual comparisons on this subtest between groups demonstrated significant differences between normal and right hemisphere abnormal EEG groups ($T = 2.365$, $p < .05$), between right hemisphere and diffusely abnormal EEG groups ($T = 2.649$, $p < .01$), and between left hemisphere and diffusely abnormal EEG groups ($T = 2.171$, $p < .05$).

There were no significant differences among groups on (WRAT) measures of reading, spelling, or arithmetic. Although with non-significant F ratios further computations were not statistically justified, individual comparisons with repeated t tests were computed between all EEG classifications and all academic measures (N = 16). None of the obtained t values reached significance.

DISCUSSION

It appears that, on the basis of EEG classification of locus of abnormality, there may be little payoff in terms of predicting specific areas of impairment in either intellectual or academic performance in children. Although no weight was given to the severity of EEG abnormality in the formal classification, post hoc review of the records suggests that this variable was more or less randomly distributed among classifications, and so this was probably not a confounding factor. One possible explanation of the lack of differentiation among EEG groups on academic or intellective variables might involve the electrode placement. In light of the fact that a common use of the EEG involves the question of seizures, proportionately greater coverage is generally afforded the temporal lobes. In the international system, for example, only one electrode is usually applied to the parietal area (P_3, P_4), although it is generally accepted that the parietal lobes are involved in a number of higher intellective functions (Butters, et al., 1970; Critchley, 1953).

The fact that the coding subtest from the WISC differentiated at a significant level between children with normal and abnormal EEG records but also differentiated at a more significant level between right hemisphere and diffusely abnormal EEG groups probably raises more questions than it answers. It must be kept in mind that, with the use of repeated t tests, there is always the possibility of an artifactual or spurious level of significance resultant from chance alpha levels.

Although with adults there is good evidence to support a relationship between EEG findings and certain intellective and academic variables, this relationship cannot automatically be considered to apply to children.

In any case, the value of routine EEG evaluations in cases of suspected learning disability, where ruling out seizure activity is not a consideration, was not supported.

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RECENT DEVELOPMENTS IN THE EDUCATION OF LEARNING-DISABLED ADOLESCENTS

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(with grateful acknowledgement to his colleagues -
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Mrs. Kerrie Jacks and Mr. Watson
Klincewicz, Level Directors)

Panel: "Educational Programs for Learning and Behaviorally Disabled Adolescents"

Council for Exceptional Children
Friday, March 24, 1972
Washington, D.C.

In sharing with you recent developments in the education of learning-disabled adolescents at the 10 year old Adams School in New York City, I do so not for the purpose of announcing definitive results - but rather for the purpose of inviting your reaction, evaluation, and questions - because, frankly, while we think we are on the right road, we know that we do not have all the answers - and that we have a long way to go.

Programs for the education of the learning disabled (and for the education of teachers for these youngsters) have met with varying degrees of success for children on the elementary grade levels. Most special schools and most teacher training institutions devote their prime attention to these age groups.

But learning-disabled youngsters need a high school education - those who have received a special education during the elementary years - and those who have not, but who have been identified as learning disabled during their early secondary years.

Although the programs to be described are transitional in that only the successful aspects are permanently incorporated, there are certain fixed guidelines in which we firmly believe, and which structure the type of school we are trying to develop.

1. We believe that "education" - however defined - is the basic contribution that the school can make to the therapy of the learning-disabled youngster.

2. We believe that the school must be as much concerned with learning as doing as it is with learning for its own sake.

3. We believe that as the youngster matures, he must experience rewarding and satisfying situations and, at the same time, realistically recognize and deal with his disabilities.

4. We believe that the school is both life (30 hours per week of it) as well as a preparation for life.

5. We believe that school must reflect all aspects of the democratic concept: self-selection, active participation, choice-making, as well as structure, consequences, prescriptions, responsibility, and accountability.

6. Finally, we believe in the idealism of the dream and the pragmatism of reality. While our head may be exploring what <u>should</u> be possible, our feet are firmly planted in what actually <u>is</u> possible.

II

Our high school population roughly divides itself into two categories; and we have developed two corresponding programs for these groups. As we later consider "questions for the future", we will explore the validity of these two separate groupings.

One such group is designated as "Academic". These pupils can be generally classified as emotionally-disturbed (although most have some underlay of neurological impairment). They come to us classified as schizophrenics; affective, impulse or charater disordered; reacting to adolescent adjustment. One fourth have been hospitalized;

three quarters are, or have been, in therapy. The average IQ of this group over the past five years has been: Verbal - 108, Performance - 96, Full Scale - 103.

While eighty per cent of these students who have graduated have entered college, the presentation of an academic program to emotionally-disturbed youngsters for the sole purpose of preparing them for college would be both manipulative and failing. Such a program would, in effect, be asking adolescents who have had great difficulty in coping with the Here and Now environment to "live for the future" as well.

The academic students at Adams rely upon emotional perception of their environment and of themselves, a fact recognized by their program which offers a wide variety of differentiated course offerings in the academic areas of English, Math, Science, and Social Studies, as well as in the more therapeutic areas of Art, Music, Drama, and Photography. The latter stimulate the adolescent to explore the inner world of his emotions; the academic subjects offer him the opportunity to explore and understand the outer world of people and events.

While such a program is not so special, the approach to, and the rationale of the program are. Many disturbed adolescents tend to close their minds to new knowledge, to opinions that differ from their own, to the need for upgrading of basic skills and for discriminating between superficial knowledge and deep-rooted understanding.

The student learns in small classes which are designed to be emotionally calming and intellectually stimulating. The teacher uses the subject matter to open up options and to expand the world of the adolescent in such a way that reason and knowledge replace the illogic

and superstition of emotional instability. The intellectual discipline developed is a means by which the young person may be able to develop structure within and for himself. Indeed, the sheer discipline of keeping a notebook, taking or copying notes, and doing homework can represent, at first, a monumental hurdle which, when mastered, represents an important step in the structuring of the adolescent and in his readiness for further emotional controls and intellectual discipline.

With structure and intellectual discipline comes the opportunity to make intelligent choices. One of the choices open to the adolescent who enjoys knowledge and loves learning is college. However, if this learning is not made relevant to the individual and to the society in which he lives, rejection and alienation are almost sure to follow.

The teacher is close to each student and is close to the environment to which his subject is relevant; he believes in the therapy of education -- the therapy of growth. An overall understanding of the adolescents' emotional and intellectual needs allows the teacher to determine which challenges and skills to offer and which successes are available. By nurturing the mind, the self-image of the adolescent is enhanced. The emphasis is on the diagnosis of the academic and emotional needs and interests of the student and on the design of a program in terms of human rather than of institutional needs. The academic program is enlisted in the service of the total human being - the human being is not the servant of the academic subject.

One aspect of our concern for human needs is the recognition that adolescents want to participate meaningfully in their present life -

to serve their own needs and in many cases, the needs of others.

One program that is popular with both the Academic and Career Center adolescents is the teaching assistant course. In the class portion of this program, which I teach, students learn about child development, about learning disabilities, and how to utilize simple teaching techniques. But the most important aspect of the program is the practicum - the three to ten hours weekly when the student assists in our Early Childhood Center, Lower School or Junior Level - when he works individually with one or two pupils - or serves as a general teaching aide in the classroom. As in all such "pupil-teaching-pupil" programs the benefit to the "teaching assistant" is often greater than it is to the pupil he teaches. In our particular situation there is the added measure of the adolescent observing aspects of his own disturbance or disability in the younger schoolmate whom he helps. In this process he provides himself with an ample measure of both academic and emotional therapy.

The Senior Psychology class provides another practicum opportunity: younger students who are experiencing difficulty with inner controls are referred to a committee of the class - known as the Student Advisory Committee. This committee reviews the situation with the troubled student, his teacher, and level psychologist (who may supply appropriate background information). The Committee then recommends a series of remedial steps it deems feasible. Some of these steps will directly involve members of the Committee - tutoring, counseling, receiving reports from teachers concerning the student's progress, participating in a conference with the pupil's parents. Thus, the Committee assumes responsibility, not only for making recommendations, but also for implementation of these recommendations.

The traditional June Week-away, an experience in living and learning in a country setting, provides for both teaching assistants and psychology students a much-anticipated opportunity to exercise their leadership roles in a setting removed from the four walls of the school. For months in advance, they work with staff in planning the week. During Week-away, they are the bunk counselors, the sports organizers, the tutors during the study hours, the dining, walking, and swimming companions of the younger students. No wonder Week-away is so keenly anticipated and so often recalled by returning graduates!

III

The other group of seniors in our school constitute our Career Center students - those primarily disabled by neurological impairment. Their average IQ at entrance is: Full Scale 75, Performance 75, Verbal 78. Although some of these young people leave Adams to enter a post-high school type of vocational training - most will, where possible, need to enter the working world upon their graduation.

One portion of their school program is planned to strengthen language and math skills through language laboratories and practical mathematics experiences (consumer math, retailing math, including the running of a school store). The other portion, quite naturally, points to the world of work.

A recent report of the Joint Committee on Mental Health of Children, Crisis in Child Mental Health, states that "there is increasing

recognition that vocational education must be redirected from training in a few selected occupational categories to preparing all groups in the community for their place in the work world". This exemplifies the strategy adopted by our Career Center. Our main concern is to prepare the disabled young man and woman to become an <u>abled</u> worker, an <u>abled</u> person - through emphasis upon what it is to be a worker (relations with the task at hand, the co-worker, the foreman, or the boss), how to optimize the perceptual-motoric development that has been emphasized in our academic classes, our gym and our workshop; how to accept the responsibilities of life as developed in a school which expects regular attendance, promptness, care of personal property and learning materials.

Within our Workshop, simulated and real sets of graduated work experiences are provided through exposure to a variety of office and business machines and through work on sub-contracts that are solicited from the business community. Within the past year our students have taken apart telephones for one manufacturer and have assembled and packaged a wide variety of products for other business concerns. For this sub-contract work, our students are paid within the framework of the Federal Workshop Program, thus gaining an understanding of the relationship between productivity, success on a job, and actual monetary rewards. In-house sub-contracts have also been let for school mailings and for a building services program.

But the Career Center concept also recognizes the need for these adolescents to become independent of the school while still under its supervision. Thus, our students are now to be found in half-day work-study programs at the Dunlop and Bellevue Hospitals, in the office of

the Manhattan Borough President, the New York City Departments of Sanitation, Engineering, and Parks, The Bureau of Air Resources, The Citizens for Clean Air, and the Laboratory for Metaphoric Environment - doing work of a clerical, recreational, or service nature.

So that we can make recommendations concerning job-entry areas or the continuing training that seems desirable, we hold ourselves responsible for a pre-vocational evaluation which consists of appropriate testing tools, but more importantly, of the on-the-job evaluation resulting from observing the student in the workshop area and in his "off campus" work-study programs.

IV

QUESTIONS FOR THE FUTURE

What has been described up to this point is not without its problems - which will have to be solved before we can be truly successful in this educational program for disabled adolescents. I am hopeful, that by frankly raising these questions for the future, the combined wisdom and experience of my colleagues at this conference will be brought to bear in their solution.

1. Staff Recruitment - Teacher-training institutions are successfully preparing special education teachers for younger children but not the teachers of the physical sciences, of French, of algebra, nor the workshop managers who also have the course work and student teaching experience related to the needs of the neurologically impaired and the emotionally

disturbed. Can we convince our university special education departments to provide programs for secondary school subject matter specialists?

2. Staff Attitudes - Often the charismatic teacher who turns on the adolescent by virtue of his youth, his proximity to the adolescent generation, his empathy - is the poorest adult model in terms of expectations, structure, and reality. How do we help this teacher see the differences between being a friend to the adolescent and becoming, instead, his friendly teacher?

3. Dependence on the Community - When a school depends on others for a portion of its curriculum, it is no longer master in its own house. The sub-contract and the work-study placement are integral components of the pre-vocational experience. Yet they are dependent on the successful contacts with a businessman or a community or government agency. How can we normalize these relationships so that there will always be an appropriate sub-contract in the workshop and a set number of appropriate work experiences to which the students can be assigned?

4. Realistic Life Choices - How do we help parents and, to a lesser extent pupils, accept the limitations that reality imposes on all of us - that college is for some and not for all, that skilled labor is for some and not for all, that even the special school - however effective it may be - cannot in and of itself reverse the results of emotional instability, neurological impairment, family stress, conditions of the employment market, and the serious upheavals in our present world which turn off our youth?

5. Innovation - How do we convince our parents, our teachers, and indeed, ourselves, that the safe, controlled traditional classroom is not

the only place where the educational "action" is - that bold new programs of independent study, work experience and learning by doing must be launched and, are no more liable to court failure than what has been and continues to be the traditional, accepted form of education.

6. Finances - How do we reward good special education teaching, provide individualized services, utilize the best (certainly not all the newest) in educational software and hardware, without excluding all but the very rich and some of the very poor from school? How do we convince our state governments that the obligation of providing a proper education for all children means exactly what it says - whether it be in a public or private facility?

We face these questions and seek their answers - daily, within our school and, on occasions such as this one, with our colleagues in the various fields serving the educational needs of the learning disabled adolescent. As we are prepared to share our experience with you, so are we receptive to your critical evaluation of our efforts.

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